



D4.1 Report and main proceedings on EU and National observatories

ENEA



DELIVERABLE 4.1		REPORT AND MAIN PROCEEDINGS ON EU AND NATIONAL OBSERVATORIES
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¹ R=Document, report; DEM=Demonstrator, pilot, prototype; DEC=website, patent filings, videos, etc.; OTHER=other

² PU=Public, CO=Confidential, only for members of the consortium (including the Commission Services), CI=Classified



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List of acronyms

ADENE	Agência para a Energia
AEA	Austrian Energy Agency
CRES	The Center for Renewable Energy Sources
EE	Energy efficiency
EIHP	Energy Institute Hrvoje Požar
ENEA	Italian National Agency for New Technologies, Energy and Sustainable Economic Development
EnMS	Energy Management System
EPC	Energy Performance Contract
EPIA	Energy Performance Improvement Action
EST	Energy Saving Trust
EUSEW	European Sustainable Energy Week
EWA	Energy & Water Agency
KAPE	Krajowa Agencja Poszanowania Energii
SIEA	Slovak Innovation and Energy Agency
SME	Small Medium Size Enterprise

Executive Summary

This report, published as part of the Horizon 2020 LEAP4SME project, includes all findings related to LEAP4SME national and international observatories and events, in terms of participants, proceedings and key recommendations from stakeholders involved.

The national observatories aimed to involve relevant stakeholders, such as policy makers, funding bodies, SMEs and business associations, in the most important phases of the project. The national observatories have been essential to match the project goals with the policy makers and stakeholders' needs. Each meeting of national observatories has been tailored in terms of organizational features and contents according to each Country policy landscape and business needs. The project partners organised 30 national observatories, involving more than 750 participants through different type of meetings: face-to-face, online or hybrid public meetings or interviews. National observatories have been held in the period May 2022 - June 2023.

With international observatories, National Energy Agencies, Regional or Municipal Energy Agencies and relevant stakeholders at EU level interested in the project implementation and outcomes have been brought together to facilitate discussion and sharing of best practices. In addition, LEAP4SME partners actively participated in other international events (such as Behave conference and EUSEW), organising dedicated sessions and workshops.

This report is structured in four chapters and one Annex. The **first chapter** – Introduction – gives a brief overview of the project's main goals, as well as this report's objectives. The **second chapter** – National Observatories – includes 10 sub-sections, the first one is introductory while the following 9 include the proceedings of the national observatories in each partner Country. The **third chapter** – International events – deals with the description of the findings of international observatories and other international events. The report ends with the **fourth chapter** – Conclusions – where the main conclusions of the report are outlined as well as the main recommendations. Finally, the **Annex** includes the nine factsheets showing an overview of national observatories in terms of main features and key recommendations.

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1. Introduction

LEAP4SME project main goal is to improve the national and local policies in place to encourage SMEs to undertake energy audits and implement the recommended energy-saving measures. The project aims to overcome the barriers to SMEs in taking up energy audits and works to provide a series of replicable recommendations applicable to SMEs across the project partner countries and the EU more widely.

The project activities have been related to map SMEs³ and develop methodologies for estimating their energy consumption⁴ at national level, analyse policy tools for SMEs⁵, and identify barriers⁶ and multiple benefits⁷ associated with SME energy efficiency.

The continuous involvement of stakeholders, belonging to both business and institutions, enhanced and supported the analysis described above, allowing the development of effective programs for the promotion of energy audits in SMEs to be defined in a structured way.

Based on the objectives of the project, two main categories of stakeholders were identified⁸: SMEs and trade associations on the one hand, and institutions and financing bodies on the other. These stakeholders were involved in the project through four different activities (Figure 1). A first activity involved the identification and evaluation of policies related to SME energy efficiency with the aim of identifying good practices, mainly in the nine partner countries but also in external countries. Through questionnaires and interviews it was possible to collect opinions from a large sample of organizations, experts, and SMEs regarding existing support tools, barriers, and needs. In addition, the organization of trainings allows to strengthen

³ LEAP4SME Deliverable 2.1 *Mapping SMEs in Europe: Data collection, analysis and methodologies for estimating energy consumptions at Country levels*, 2021.

⁴ Herce C., Biele E., Martini C., Salvio M., Toro C., Brandl G., Lackner P., Reuter S., *A methodology to characterize energy consumption in small and medium-sized enterprises at national level in European countries* (2023) Clean Technologies and Environmental Policy, DOI: 10.1007/s10098-023-02606-z

⁵ LEAP4SME Deliverable 2.2 *Existing support measures for energy audits and energy efficiency in SMEs*, 2021.

⁶ LEAP4SME Deliverable 2.3 *Energy audits market overview and main barriers to SMEs*, 2021.

⁷ LEAP4SME Deliverable 6.1 *Report on the literature review analysis of multiple benefits*, 2022.

⁸ LEAP4SME Deliverable 3.1 *Guideline document on SMEs selection criteria and stakeholders engagement*, 2021.

awareness and skills. Finally, national and international observatories have been a key tool for networking experts in the field of energy and energy efficiency for SMEs.



Figure 1 – Stakeholder engagement in the LEAP4SME project

The National Observatories aimed to involve policy makers and other relevant stakeholders in the most important phases of the project. The national observatories have been essential to match the project goals with the policy makers and stakeholders’ needs. The observatories have been customised in terms of organizational features and contents according to each Country needs and expectations, also considering the local policy landscape. National Observatories have been conceived with a light structure addressed to a low but effective number of Stakeholders (e.g. SMEs associations that represent their associates and can spread the message).

With International Observatories, National Energy Agencies, Regional or Municipal Energy Agencies and relevant stakeholders at EU level interested in the project implementation and outcomes have been brought together to facilitate discussion and sharing of best practices. In addition, LEAP4SME partners actively participated in other international events (such as Behave conference and EUSEW), organising dedicated sessions and workshops.

This report compiles all findings related to national and international observatories and events: participants, proceedings and key recommendations from stakeholders involved.

2. National Observatories

2.1. Organization of the National events

The project partners organised 30 national observatories, shown in Table 1, involving a total of more than 750 participants through face-to-face, online or hybrid meetings or interviews. Most partners organised public meetings structured both with presentation sessions and round tables, while others (AEA and EST) interacted with key stakeholders through bilateral interviews. Both typologies of Observatories have been held in the period May 2022- June 2023.

Table 1 – List of National Observatories and description of their main features

Organized by	Country	Date	Type	Mode	Participants or Interviewees
AEA	Austria	June 2022 - February 2023	12 Interviews	Online	13
AEA	Austria	17 th January 2023	Interview	Online	2
AEA	Austria	14 th February 2023	Interview	Live	1
AEA	Austria	12 th May 2023	Interview	Online	2
AEA	Austria	17 th May 2023	Interview	Online	1
EIHP	Croatia	2 nd June 2022	Meeting	Live	4
EIHP	Croatia	20 th June 2022	Meeting	Online	9
EIHP	Croatia	3 rd November 2022	Meeting	Live	4
EIHP	Croatia	29 th March 2023	Meeting	Live	5
CRES	Greece	12 th July 2022	Meeting	Hybrid	12
CRES	Greece	26 th June 2023	Meeting	Live	10
ENEA	Italy	17 th May 2022	Meeting	Hybrid	23

ENEA	Italy	24 th May 2022	Meeting	Hybrid	85
ENEA	Italy	14 th June 2022	Meeting	Hybrid	55
ENEA	Italy	24 th November 2022	Meeting	Hybrid	70
ENEA	Italy	26 th January 2023	Meeting	Hybrid	130
EWA	Malta	23 rd June 2022	Meeting	Live	23
EWA	Malta	24 th November 2022	Meeting	Live	27
KAPE	Poland	26 th May 2022	Meeting	Live	23
KAPE	Poland	12 th December 2022	Meeting	Online	48
ADENE	Portugal	1 st June 2022	Meeting	Online	15
ADENE	Portugal	10 th October 2022	Meeting	Online	15
ADENE	Portugal	28 th February 2023	Meeting	Online	21
SIEA	Slovak	29 th June 2022	Meeting	Hybrid	27
SIEA	Slovak	15 th May 2023	Meeting	Hybrid	16
SIEA	Slovak	22 nd May 2023	Meeting	Hybrid	88
EST	United Kingdom	1 st September 2022	Interview	Online	3
EST	United Kingdom	30 th January 2023	Meeting	Online	25
EST	United Kingdom	February - March 2023	7 Interviews	Online	9
EST	United Kingdom	13 th March 2023	Meeting	Online	25

Figure 2 shows on the left the share of different meeting typologies on the total. Public meetings account for two thirds of the total and they have been mostly represented by live meetings, followed by hybrid and on-line meeting. The shares of participants by type of

meeting are shown on the right. The two pie charts highlight that hybrid meetings allowed to engage a higher number of participants.

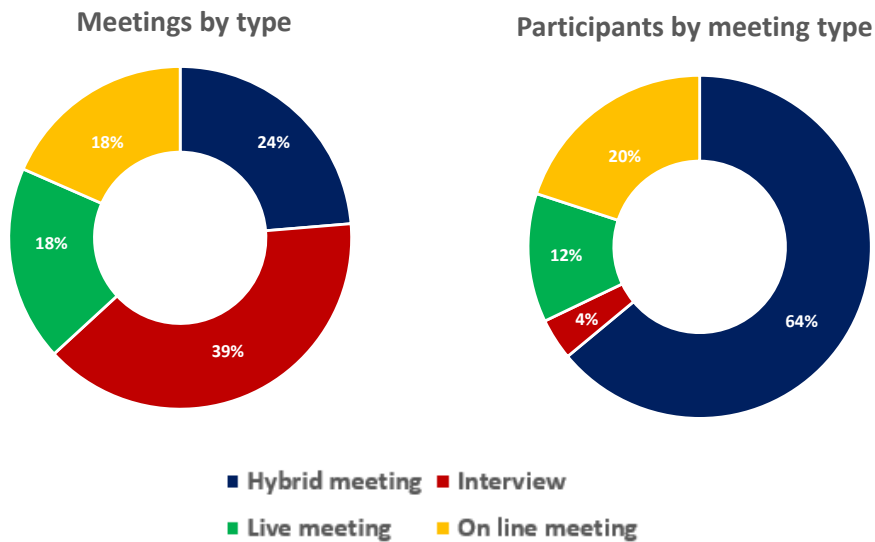


Figure 2 – National Observatories: Shares of meetings by type and of participants by meeting type

The type of participants of National Observatories in 9 countries is shown in Figure 3, showing a clear prevalence of business stakeholders, followed by policy makers and funding bodies.

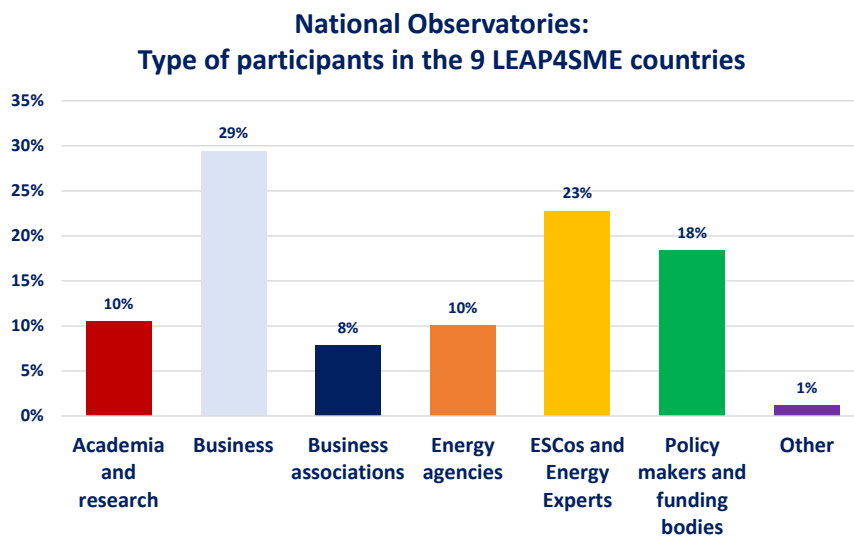


Figure 3 – Type of participants in the National Observatories

Sections from 2.2 to 2.10 provide details on the National Observatories organised in the 9 partner countries, including a sub section for each meeting. These sections have been developed based on the contributions provided by all the partner agencies who organized each meeting/interview.



2.2. Austria

2.2.1. Landscape and approach

The Federal Government (Ministry for Climate Action) is responsible for environmental subsidies in Austria (in green in the chart above). There are various environmental investment subsidies for all businesses (e.g., replacing old lighting systems with LED).

The federal support programmes (in red in the chart above) are controlled by the nine provinces and are tailored to SMEs. Among other things, these programmes offer grants for consulting services, e.g., for energy checks in SMEs. The federal support programmes (regional programmes) have networks of qualified consultants for climate-relevant topics in SMEs.

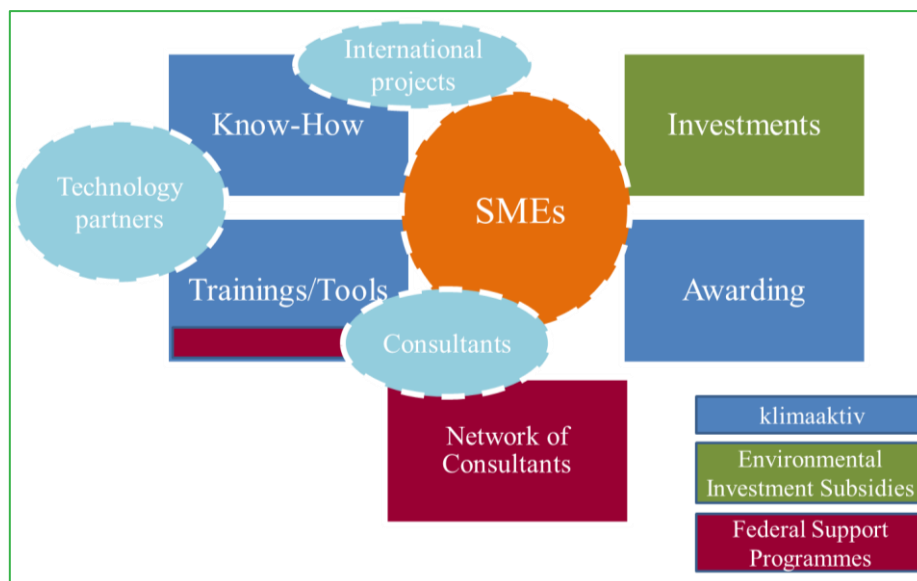


Figure 4 –Energy Efficiency Landscape in Austria

The klimaaktiv programme is the climate protection programme of the Austrian Government that supports SMEs in climate-related actions and assists the government as well as federal provinces in climate protection initiatives. It is operated by the Austrian Energy Agency on behalf of the Ministry for Climate Action.

Based on this structure, a methodology for interviews and training was developed:

- Step 1: Preparation of an interview guideline for bilateral interviews by AEA;
- Step 2: Bilateral interviews (observation meetings) based on the interview guideline with representatives of each federal support programme by AEA;
- Step 3: Training of representatives of the Ministry for Climate Action and federal support programmes (see presentation in the annex) and discussions on how to overcome barriers for SMEs to undergo energy audits and implement energy efficiency measures.

The interview guidelines have been adopted in all the different interviews and the collected suggestions have been finally presented and discussed with the Ministry.

Table 2 – List of interviews with representatives of the regional programmes of the provinces

Federal support programmes (Regional programmes)	Interview dates (online)	Number of participants*
Salzburg: Umweltservice Salzburg	7 July 2022 13 July 2022	1
Burgenland: Forschung Burgenland	14 June 2022 2 September 2022	2
Tyrol: Ecopolus Tirol	13 June 2022 22 August 2022	2
Vienna: Ökobusiness Wien	12 July 2022	1
Vorarlberg: Energieinstitut Vorarlberg	15 February 2023	1
Lower Austria: Ökomanagement Niederösterreich	25 August 2022	2
Carinthia: Land Kärnten	17 August 2022	1
Styria: WIN Steiermark	14 June 2022	1
Upper Austria: ESV Oberösterreich	3 June 2022 (email)	2

* Excluded participants from AEA

2.2.2. Bilateral interviews on regional programmes

In a first step, bilateral interviews were carried out: the list is shown in Table 2. The focus of these interviews (observation meetings) was to discuss with representatives of the regional programmes of the provinces the barriers and challenges identified in the H2020 LEAP4SME project in conducting energy audits and implementing energy efficiency and renewable energy in SMEs. The aim of these interviews was also to determine further recommendations for improving energy audits in SMEs in Austria. An interview guideline was developed as a basis for these interviews.

2.2.3. Bilateral interviews – results

How can you motivate small and micro-companies to take advantage of subsidised energy advice despite a lack of time and resources?

- These are the motivating factors for small businesses:
 - The more effortless and uncomplicated the better, e.g. low-cost initial check, short registration process at the beginning, only few forms required
 - The lower the costs and the higher the subsidies, the better
 - Support from external consultants is important, as small businesses often have resource problems (in terms of both money and time): it is important that consultants allay fears of businesses concerning administrative hurdles; meet businesses where they are.
- These are the motivating factors for SMEs:
 - It is hard to get some companies excited about energy consultations. When something comes up, they want to implement it immediately.

- It is very difficult to filter out the right ones from lists with many energy consultants. A list of recommended consultants specialised in the respective sector would be very helpful. What is generally still missing is support during implementation.
- Regulations are needed to encourage businesses to act. Obligations such as the requirement to present an energy performance certificate when applying for some funding are successful and are well accepted.
- Preparing palatable information is generally important to motivate SMEs in some branches to focus on energy efficiency or sustainability (the interest group can support this, e.g., with information in newsletters). Projects, e.g. the introduction of an energy management system, must appear manageable; there must be several stages of implementation, a tangible benefit (expressed in money terms) must be visible and monetary benefits must be communicated.
- Information should be disseminated by industry/interest representatives, for example in newsletters, webinars or printed magazines.
- Another successful strategy is to include testimonials from the sector and encourage exchange with businesses that have already implemented certain measures. When the effort, lead time, implementation time and impact are explained directly by the example business, this inspires many businesses to implement their own measures. Exchange is very important. It is better to show examples from smaller businesses, because if a small business can implement such measures, it is also feasible for a larger business.
- Certification such as the Ecolabel is also an attractive option for the tourism sector. It gives structure and has an external effect at the same time. This is particularly important because sustainability is becoming an increasingly relevant and key decision-making factor for stakeholders. Certification also prevents greenwashing.
- Due to current energy prices, companies are motivated to make use of consultations, but the problem is that there are not enough energy consultants.

There are not enough capacities for energy consultations, both for initial consultations and for implementation consultations. More contact points and offers for energy consultations are needed, but the quality of the consultations must also be ensured.

- The best way to approach micro-enterprises is through personal contact.
- A good way to do this is an independent initial consultation by telephone, which enables micro-enterprises to take advantage of an easily accessible energy consultation. During the initial consultation, it is important to evaluate the overall situation regarding energy efficiency and renewable energy and to identify the most important fields of action and solutions. It is also important that the initial consultation cover funding advice and energy planning. Regional energy agencies are well suited to ensure this independent initial consultation, taking regional energy planning into account.
- An independent initial consultation is also important to prevent energy consultants from advising only on the replacement of oil boilers and not considering the entire building and its energy efficiency.
- Companies should consult qualified experts for detailed questions. Contact with these professionals should already be established during the initial consultation. A connection to or knowledge about the region in which the company is located is an advantage for these experts.

In your opinion, does it make sense for smaller companies (less than 100 employees or less than 50 employees) to be obliged to undergo an energy audit/energy advice?

- If energy audits are legally obligatory, they can no longer be subsidised, which is a disadvantage.
- If energy audits were legally obligatory, there should be more differentiation according to energy consumption, more graduated than the current proposal of the Energy Efficiency Directive (EED recast): the threshold value of the EED

recast should be discussed further; important to distinguish between SMEs and non-SMEs.

- In any case, there should be no obligation for all audits/consultations to be carried out at the same time; this also reduces the quality of the consultations.
- The goal of the industry and interest groups is primarily to minimise the bureaucratic burden on businesses. An obligation for energy consultations or even energy audits would mean a great effort for businesses and would meet with very little acceptance. Furthermore, the obligation would mean that any subsidy for energy audits or energy consultations would be lost and the business would have to bear the costs itself.
- It works better to integrate provisions into subsidy systems, such as the obligation to submit an energy performance certificate.
- Another difficulty with even more standards is the different requirements of each standard demanded by different bodies. For example, banks will soon require compliance with ESG standards. It is very hard for a business to know and keep track of all the details. There are too many different systems for a business to prove that it is sustainable. This hinders implementation and means that only the bare minimum is done.
- Energy-intensive companies generally make use of external energy consultations even without a legal obligation and usually have the financial means to do so. As a result, it would not be problematic for these companies if they were legally obliged to carry out an energy audit and thus could no longer take advantage of subsidised energy consulting.
- The problem with subsidies is often the "we only do what is funded" mentality.

In your experience, are there enough well-qualified energy consultants available? If so, what is the recipe for success? If not, how could the qualifications of existing energy consultants be improved?



- There are too few qualified energy consultants, or they are hard to find. Some consultants have made a name for themselves some sectors, but they do not have enough resources to handle all requests, especially in today's world of rising energy costs. A list of energy consultants specialised in different sectors would be very helpful. In Austria, one could approach the regional programmes of the federal states to motivate them to create such sector-specific lists of consultants.

If there are too few energy consultants, how could the profession be made more attractive?

- Above all, there are too few experts in the area of energy efficiency in processes (e.g. production processes, facility management). In contrast, there are many experts in the field of sustainability, albeit with different qualifications.
- Some universities already have courses with a focus on energy, but graduates usually lack the practical experience to work as energy consultants afterwards. It would therefore be important to train more energy consultants with a practical background.
- It would also be important to ensure the quality of energy consultations through a recertification/requalification system for energy consultants and installers. Energy consultants should undergo continuous training to be able to include current technical developments in their work, e.g. large heat pumps for steam generators.

How can cooperation between various experts be increased?

- Not every energy consultant needs to be an expert in all fields; however, it is important that energy consultants know about other environmental consultants and disciplines (e.g., waste water experts, heat recovery, material efficiency, biogas etc.).

Do you know of any examples where such cooperation already works well?



- In the regional programmes of some provinces, modules (funded counselling modules) were already implemented that promote networking between different disciplines.
- In new construction or extension projects, more attention is paid to coordination between the trades. In refurbishments, the trades are often considered separately, as measures are often carried out on individual parts of the building (without keeping the big picture in mind) that need to be prioritised, e.g. due to structural defects.
- Regional energy agencies can stimulate the exchange between consultants by organising regular (e.g., 1–2 times per year) network meetings for energy consultants.

In your opinion, is the current exchange between the policy stakeholders sufficient or is more exchange necessary and if so, how can this be optimised?

- The exchange between individual stakeholders is very important but in practice depends on several factors and does not always work optimally.
- Factors can be, for example, different views: there are stakeholders who believe that the topic of energy saving causes fear because it is often associated with making sacrifices, which should be avoided when communicating with companies. Other stakeholders see energy efficiency and energy saving as a top priority, which should definitely be communicated to companies.

How should the “energy efficiency first” principle be implemented in energy audits?

- Looking at energy efficiency is very important, especially when designing programmes.

How can investments in energy efficiency and renewable energies be forced? How can the administrative burden for companies be reduced?

- Funding should be easily accessible.

- Predictable funding is important.
- Small enterprises: further support by consultants is important, e.g., when comparing offers for investment projects, because external expertise is needed here.
- When installing a PV system, businesses first must wait a very long time for the modules themselves and then for the grid connection contract.

Which current communication tools work well, and which would be useful in addition?

- It is important to address small businesses directly, but not to overload them with too much information.
- It is important to convey to businesses that it is easy.
- Important basic terms should be repeatedly communicated to small businesses, e.g., initial information about PV and heat pumps (what it is and when it makes sense).
- In a first step, it is important to have energy consultants who give an overview; only then should a topic be explored in greater depth.
- The Economic Chambers in the federal states have direct contact with companies, which are important communication channels.
- It is important to work with testimonials, e.g., an innkeeper from the neighbourhood who explains how they have achieved energy savings.
- Authentic experiences are important, but there is often not enough time for regular get-togethers and personal exchanges (which, however, is generally desired by companies; see also the answer to the question on learning networks).
- The online energy check is a good tool to find out which measures should be taken.

- In any case, the best way to communicate with the businesses is through interest and industry representatives. It is not possible to create a mailing list otherwise. The materials given should help businesses solve problems, and then the tools will be well received.
- Webinars (approx. 2 hours, free of charge) should only contain short inputs. Specialist training courses are usually longer face-to-face events, but they are also very popular. Online events are generally very well received now. As face-to-face events, they would not have as many participants.

Are there good/best practice examples of how to integrate energy efficiency and renewables into the education system (including apprenticeship training)?

- A project is being planned to develop additional modules for apprenticeship training: these modules will include energy-relevant topics (cross-occupational basics), which motivated apprentices can complete on a voluntary basis in addition to their apprenticeship training; a certificate as proof of completion will also be developed.

In your experience, do energy consultants use benchmarks for a first rough analysis during energy audits?

- In general, benchmarks (energy performance indicators) are not very meaningful because there are too many factors influencing energy consumption.
- Nevertheless, benchmarks provide guidance, but subsidies and other support should not be linked to them.
- In any case, businesses find benchmarks very useful as long as they have a certain level of detail, such as the facilities of the business (wellness area, sauna, restaurant, all-day kitchen or breakfast only, etc.). Such benchmarks are very helpful for businesses to assess themselves.
- When communicating benchmarks, it would also be helpful to show example businesses with their facilities and the corresponding benchmarks.

- Companies ask for benchmarks because they usually want to know how their performance compares to other companies.
- However, energy-related benchmarks should be viewed critically, as there are many influencing factors on energy consumption, which makes a comparison between companies difficult. Benchmarks also tempt companies to compare themselves too much with others. It is better when companies strive to improve their own efficiency, not to be better than another company. It is always important to assess the actual state of a company first and use this as a comparison.

How can learning networks be developed and increased?

- In principle, learning networks are good because authentic experiences are important; but in small companies, there is usually not enough time for regular get-togethers and personal exchange.
- Whether or not exchanges should take place within a sector depends on the companies; possible competition between companies must be taken into account.
- It is difficult to establish learning networks at institutional level.
- It is also difficult to sustain learning networks because they usually depend on the commitment of individuals.
- In order to encourage businesses to participate in networks, easily accessible information must be offered. The network must be structured in detail. This is difficult and requires a lot of energy and time to keep such a network alive. If anything, it must be regional.
- Learning networks between companies are useful, but policy stakeholders should remain in the background. Often learning networks are sector-based, but the competitive situation of some companies on the market makes it difficult to "get into sharing" within the learning network.

Further topics

- Implementing energy and environmental management systems in companies is more sustainable than conducting an energy audit; this also applies to smaller companies. An energy and environmental management system is also suitable for smaller companies, but obtaining the certificate is often too costly for them.
- The potential lies in tenders: if energy and environmental management systems are required for private contracts or public tenders, their implementation will be pushed.
- There could also be potential in the redesign of subsidies: support is given to companies that are classified as green, e.g., according to a future taxonomy regulation.

2.3. Croatia

Until the end of November 2022, three observatory activities for policy makers were done in Croatia by LEAP4SME representatives. The Croatian Employers' Association (HUP) was the most supportive institution, offering its network of companies-members, and co-working in the event organization. In principle, prior to the organization of the training activity for the policy makers, a series of observatory activities was deemed as the necessary fact-finding and updating prerequisite for the proper performance of the trainings.

The total number of participants in the three observatories is 22 and their type is shown in Figure 5.

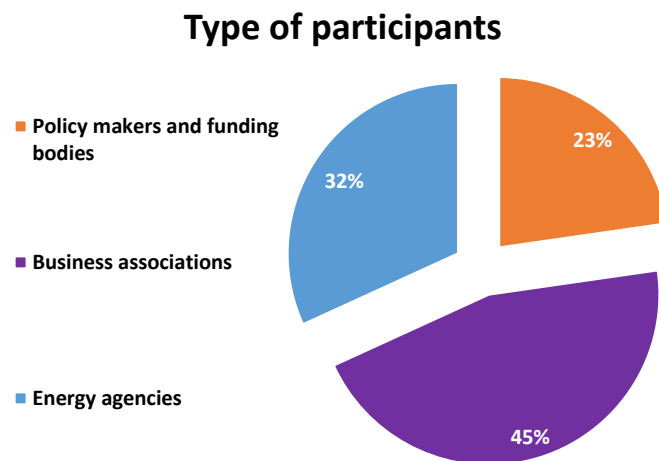


Figure 5 – National Observatories in Croatia: Shares of participants by type of organisation

2.3.1. National Observatory, 2nd June 2022

The first observatory was held in the premises of HUP, Croatian Employers' Association, in Zagreb, on 2nd June 2022.

Attendees From EIHP:

- Vedran Krstulović

- Ilja Drmač

Attendees from HUP:

- Anny Brusić, manager of HUP- Association of small and medium entrepreneurs
- Petra Sentić, Manager of branch associations: Association for energy, Association of professionals for EU funds

PROCEEDINGS OF THE MEETING

HUP (Croatian Employers' Association) is a voluntary, non- profit and independent employers' association that represents, promotes, and advocates for the interests of its members. It has 29 branch associations that advocate for specific economic interests of different sectors, industrial SMEs being the most important members.

The LEAP4SME programme was presented again to HUP representatives, in more details considering especially the possible impacts and actual usefulness of energy audits. All parties have agreed that this area is still insufficiently developed, and the areas of most useful activities were discussed. HUP has recognized the situation in which potential specialized fundings – allocations, calls etc. – for energy efficiency in SME are occasionally available, but the preparation of mature projects is lacking. The principles of thorough energy audits, combined with economic analyses, potentials and corresponding financing possibilities could be a significant incentive for the SMEs, to take the approach in line with the LEAP4SME objectives.

2.3.2. National Observatory, 20th June 2022

The second observatory was held online, on 20th June 2022.

Attendees From EIHP:

- Vedran Krstulović

Attendees from HUP:

- Anny Brusić, manager of HUP- Association of small and medium entrepreneurs
- Petra Sentić, Manager of branch associations: Association for energy, Association of professionals for EU funds

Attendees from the Association of professionals for EU funds:

- Jelena Festini – PWC
- Niko Letilović – Deloitte
- Zlatko Salahović – Revent Savjetovanje
- Duško Radulović - Sensum
- Mario Protulipac - WYG
- Boris Pekić – UHY

PROCEEDINGS OF THE MEETING

The HUP's Association of professionals for EU funds was selected as the interesting discussion counterpart as they are dealing with various financing bids for energy efficiency in SMEs, and audits were recognized as an important element. Also, its members have experiences and direct insight into the situation within specific SME branches. The most important moments from the discussion:

- The SMEs from the service sector, that are outside of the tourism branch, should not be omitted – so far, they didn't have an opportunity for co-financing of the green investments; they shouldn't be omitted from the future measures and policies.
- One proposal was considering the use of vouchers, to motivate smaller enterprises for energy audits.
- Whoever pays less than 100 000 kn (13 300 EUR) for energy per year is not motivated to consider energy audits – selection item.
- Regarding the present calls, at some calls the indicators do not define the clear energy savings, so the recommendation is that the energy audits at the beginning, and within the completion of the project, should be included in the calls for co-financing. Observed problems – if such an indicator is set, and some applicant wants to do a project aimed to circular economy without specifying energy efficiency, they shouldn't be excluded. Some calls did not specify energy efficiency, but gave points additionally, which is seen as a good practice.
- A benchmarking as the criterium – what savings (kWh) are obtained per invested EUR? Allegedly usual practice in Europe, here not, so it was recommended within the

discussion. It was also noted that the reliability of such indicators in various industries and processes may be disputable.

2.3.3. National Observatory, 3rd November 2022

The third observatory was held in the offices of the Ministry of economy and sustainable development (MINGOR), in Zagreb, on 3rd November 2022.

Attendees From EIHP:

- Vedran Krstulović
- Ilja Drmač

Attendees from MINGOR:

- Ognjen Vidaček, Senior adviser in Service for Energy Efficiency
- Zdravka Zmajlović, adviser in Service for Energy Efficiency

PROCEEDINGS OF THE MEETING

Within the discussion with the representatives of the Ministry, the LEAP4SME program was once again presented to them, and the update of activities was given. The actual framework, policy and support to the energy audits for industry and other SMEs was discussed, with an insight into the obstacles, and identification of the most useful support measures.

More attention was given to the energy auditor certification scheme. The info on updating of the register of the appointed institutions was given by MINGOR representatives. These companies are appointed to educate and issue the licences to auditors, that can be legal or natural entities. The validity period and the control mechanisms were discussed. The situation in which only large companies, and not SMEs, have the obligation to perform the energy audits, was further discussed, as well as the motivation for SMEs to do so.

Further, there was informing on the situation where SMEs are applying for the savings calculations, as a prerequisite for specialized calls for project financing. The damping prices among energy auditors was recognized as a problem. Within the cycle of the follow-up of the energy efficiency projects, the SMIV application (system for the survey, measurement and

verification of energy savings), issued and supported by the national coordination body, was mentioned as the partial solution. A need for a more precise data check was emphasized.

In general, the lack of personnel for the support of energy efficiency and auditing schemes within the ministry was stipulated. The possible actions within LEAP4SME, aiming for the inclusion of other related institutions, were discussed. A further observatory with the Fund for energy efficiency and/or the Chamber of economy was preliminarily planned. All those activities are regarded as the preparation for the training event for policy makers.

2.3.4. National Observatory, 29th March 2023

The third observatory was held in the premises of of the Environmental Protection and Energy Efficiency Fund (FZOEU), in Zagreb, on 29th March 2023.

Attendees From EIHP:

- Vedran Krstulović
- Ilja Drmač

Attendees from FZOEU:

- Maja Rajčić, head of the Sector for Energy Efficiency
- Jasmin Mekanović, Sector for Energy Efficiency
- Robert Petrić, Sector for Energy Efficiency

PROCEEDINGS OF THE MEETING

The Environmental Protection and Energy Efficiency Fund was established for the purpose of securing additional resources for the financing of projects, programmes and similar activities in the field of conservation, sustainable use, protection and improvement of the environment and in the field of energy efficiency and use of renewable energy sources. Further, it is financing the preparation, implementation and development of programmes and projects and similar activities in the given fields. The Fund's areas of activities are environmental protection, energy efficiency, waste management, and it acts as the intermediate body level 2.

The observatory has started with the presentation of the LEAP4SME program, the activities so far, and of the discussions with other institutional stakeholders, as well as the findings and conclusions. A specific regard was given to the obstacles to wider energy audit introduction, identified so far within the discussions.

Since the Fund is carrying through the calls for EE projects, the issue of preparedness of applied projects was in focus. The energy audits are the important tool for assuring the quality of these projects, but in practice it is difficult to count on their availability. The representatives of the fund have described the key aspects in dealing with the reliability of applied proposals:

- Operatively, the question is whether to publish calls for typified projects with defined parameters, or to wait for meaningful projects. In the first option, it is easier to assess the results, but it excludes potentially fruitful diverse projects. In the second option, the interesting applications may appear, but then it may be more complicated to assess the targets and results.
- The “Study on savings” is the defined document and procedure which is helpful for the assessment, but it is not mandatory. In any case, the main project design (investment project design, other document relevant for application) should contain the estimation of savings.
- One solution is insisting on the compliance with the corresponding ISO standards for the efficiency, but the best approach is requiring the energy audit.
- The fund is continuously working out the procedures for the applicants, tending to include the elements for project assessment. However, the intention is not to burden the applicants with additional costs, and that is the main problem with insisting on energy audits.
- The SMIV (*Sustav Mjerenja I Verifikacije* – Measurement and Verification System) and the corresponding ordinance (Ordinance on the system for survey, measurement, and verification of the energy savings, from 2015) are the key regulatory bases.
- It is an observed practice that a system with photovoltaics is installed in order to comply with the efficiency/RES requirements, which doesn't actually improve the energy efficiency.

- When assessing the results of the EE projects, there is the issue of the base year. This is the year with the energy use level prior to the implementation of intended measures, and if it is set in the COVID period, the results are not reliable.

The key aspects of the discussion were recollected, and a discussion with other institutional stakeholders was anticipated within the forthcoming event.

2.4. Greece

2.4.1. National Observatory, 12th July 2022

The 1st Greek National observatory was held in CRES premises 19th Marathonos Av, Pikermi and online, on 12th July 2022, 12:00 – 14:15 EET.

The Centre for Renewable Energy Sources and Saving (CRES) organised the first of a series of observatories/round tables focused on energy efficiency in SMEs. The aim was to involve policy makers and other relevant stakeholders (business associations, ESCOs etc.) to get their view on specific core-topics for LEAP4SME.

The overall number of participants was 12 and the shares of different participant types are shown in Figure 6.

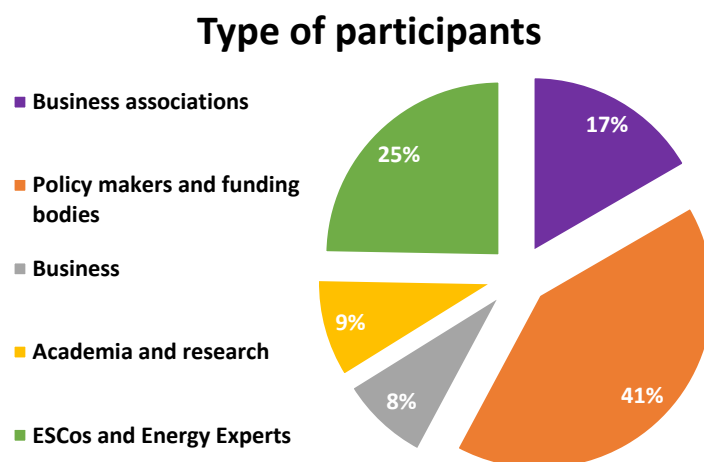


Figure 6 – First National Observatory in Greece: Shares of participants by type of organisation

AGENDA OF THE MEETING

Round table / Observatory on Energy Efficiency for SMEs		
12:00- 12:15	Introduction	CRES
12:15-14:00	Focus: Energy Audits and Energy Efficiency in SMEs: obstacles, opportunities and proposals	Associations of SMEs Associations of ESCOs Engineering Associations Associations of Energy Inspectors
14:00-14:15	Q&A and feedback	All the participants

PROCEEDINGS OF THE MEETING

Dr Leonidas Vatikiotis, IME GSEVEE (Small Enterprises' Institute) introduced the importance of the energy cost. In Greece the energy costs for SMEs during the last year has been increased by 90%, while the fuel costs for their vehicles has been increased by 70%. For comparison, the cost for the raw materials and goods was increased by 48% and the cost of supplying equipment and machinery was increased by 35%.

Energy poverty is a big problem of micro-enterprises. Unpaid bills and arrears are mainly found in companies with annual turnover up to 50,000 euros and number of employees up to 1 person.

Greek SMEs are lagging behind European SMEs in the Green Transition. The main causes are the inappropriate/ unsuccessful adaptation of European programs to the Greek reality, the incomplete information of interested parties and the lack of economic resources for their own contribution.

Mary Nicolaou from ETVA VIPE (Managing body for planning, development, utilization and management of Industrial Areas and Business Parks). She indicated the crucial role of the cost of the energy consumption for the Enterprises.

In ETVA VIPE they have realised that during the last year there is a significant rise in the energy cost. They receive it either as complaints through the enterprises and their associations or from the participation of ETVA VIPE in various forums, Or by their communal infrastructure

that serves the enterprises within the industrial areas, which also consume electricity, such as the biological treatment plants, the water supply systems and the electric lighting.

The enterprises have chosen many ways to compensate the increased cost of the electricity. Some of them decided to install photovoltaic panels and through the net metering to reduce their consumption.

Others that already had photovoltaics plan to increase the installation. At last, some of them consider changing their energy mix in order to change their infrastructures.

Vassilis Iliadis, GREENESCO ENERGY S.A. There are high opportunities for ESCO projects in SMEs because of the existing low energy efficiency for most buildings and facilities and because the high energy costs create an urgent need for action.

There are two approaches for the Energy Projects financing. The first is the Pay as you go approach. Here the purchase of equipment is made by using available cash (profits, loan, bonds, leasing of capital, sale of shares, etc.)

The second is the Pay as you use approach. Here there is use of equipment through leasing or through Energy Performance Contracts. As energy efficiency projects lead to energy savings during their lifetime, the 2nd approach seems more feasible.

The Energy Performance Contracts have the following advantages. They reduce the risk of investing in energy projects, it is not necessary for the enterprise to have a technical background, the EPC guarantees the results of the proposed projects, and they are small scale one-off investments

The disadvantages of the EPCs are the following. The enterprise does not keep all savings profits, taxes, other financial gains are negotiable, and this kind of contracts are complicated.

Vasilios Aivalis, Technical Chamber of Greece / Regional Department of Western Greece. For the technical chamber, it is given that the Energy Audits can help to improve the investments of enterprises to increase their energy efficiency improving at the same time, the competitiveness of the company.

Most of the SMEs do not have an energy policy. This happens because 90% of the SMEs in the country are self-employed.



Two years ago, the Regional Operational Programme (ROP) of Western Greece had foreseen an energy action for recycling and energy saving in SMEs. There was a very low participation, and the available public funding was not covered. There were two main reasons for this. First, the enterprises were not aware of the benefits they may have and second the engineers' poor knowledge of the energy audits actually limits the action of all these programs.

Even though the action was widely publicized, it was done only to the entrepreneurs and not to the scientific staff of the area, in order to arouse their interest.

In our region, we have and another huge problem. Throughout the north-western Peloponnese, we have a huge problem of the capacity of the electrical grid network that hinders the integration of the renewable energy sources.

Konstantinos Laskos, Panhellenic Association of Certified Energy Inspectors – PESYNEP, Energy Inspection, Energy Audit, Energy Management System. What they are, where they differ and how can someone choose what he needs.

In Greece, the current situation of the energy class of the buildings is the following:

B -2%, C- 16%, D- 21%, E -17%, F- 15%, G- 29%

EU's main legislative instruments promoting the improvement of the energy performance of buildings within the EU and providing a stable environment for investment decisions to be taken.

Energy audit in simple words

1. How much energy is consumed?
2. Where is it consumed?
3. Is it consumed efficiently?
4. How can energy efficiency be increased?

Difference between energy inspection - energy audit

- Predetermined mode - actual mode.

- Energy consumption calculated for the average user, for the average climate of the region, for comfort conditions - actual energy consumptions from energy tariffs and measurements for the specific use, for the specific climate, for actual conditions.
- Energy consumption for heated rooms for heating cooling ventilation, DHW, lighting - energy consumption for heating cooling ventilation, DHW, indoor lighting, outdoor lighting, socket loads, engines etc.
- Operating condition during inspection depending on the reason and case - operating condition during audit in operation mode.
- Evaluation of proposals simple payback period, locked fuel invoices - evaluation of proposals net present value, real fuel invoices.

For the Energy Inspection / Energy Audit / Energy Management System there is always someone who will offer to do it cheaper, but we must take into consideration the quality of the work.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Creation of an Energy Saving program specifically designed for micro and small enterprises that aims at the energy upgrade of the building infrastructure.
- Creation of specialized programs aimed at the renewal of mechanical equipment with the withdrawal of high consumption / low efficiency machines.
- Shift to small-scale RES, subsidies for the installation of PV on rooftops.
- Adaptation the law for the Energy Communities in order to facilitate the creation of clusters between micro and small enterprises.
- Establishment of a support scheme for SMEs in order to cover the cost of the energy audits and the full or partial cost for the implementation of the recommendations that ensure high economic return by creating financial or guarantee mechanisms.
- Creation of a customer credit rating scale with indicators that will be also accepted by the banks.
- In order for SMEs to adopt energy efficiency measures, government bodies need to establish an enabling framework aimed at providing technical assistance and targeted information.

- Encourage or enforce SMEs to undergo energy audits and the subsequent implementation of the recommendations of these audits.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/event/1st-greek-national-observatory-and-round-table/>

VIDEO PRESENTATIONS

<https://www.youtube.com/watch?v=VYmxxeKMsPM>

SUGGESTED LITERATURE

https://imegsevee.gr/wp-content/uploads/2020/07/%CE%9D18_vardoulakis.pdf

<https://web.archive.org/web/20220705115342/https://www.gsevee.gr/3847/>

<https://eur-lex.europa.eu/legal-content/EL/TXT/PDF/?uri=CELEX:32012L0027&from=EN>

2.4.2. National Observatory, 26th June 2023

The workshops foreseen in the frame of LEAP4SME project and are described in this report cover two different types of activities: a) training course, and b) observatory for policy makers. The training session included the presentation of LEAP4SME project and its main results (by CRES), as well as an overview of the national funding schemes and support mechanisms for SMEs and Energy Efficiency made by a member of the Committee of the National Energy and Climate Plan (NECP)

The workshop (i.e., the training seminar, followed by the observatory for policy makers) was held in the Ministry of Environment and Energy (Meeting room of the General Secretariat for Energy & Mineral Resources) in 119 Mesogion Av., Athens, on 26th June 2023, 11:00 – 13:00 EET.

The overall number of participants was 11.

AGENDA OF THE MEETING

Seminar: Energy audit and energy efficiency measures in small and medium-sized enterprises		
11:00-11:10	Presentation of the LEAP4SME project and its to date results	L. Giakoumelos (CRES)

11:10-11:20	Presentation of the technical issues faced by SMEs related to Energy Efficiency issues	G.Goumas (CRES)
11:20-11:40	Presentation of national funding schemes and support mechanisms for SMEs and Energy Efficiency	Dr. Ch. Tourkolias (NECP Committee)
11:40-11:50	Presentation of other support schemes/ possibilities – EU case studies	E. Mavrou (CRES)
11:50-12:00	Break	
Energy Efficiency Observatory for SMEs		
12:00 - 13:00	Roundtable discussion: The view of policymakers	Moderator: Dr. Ch. Malamatenios

The workshop was attended by 11 people in presence. The distribution of the participants by their type of organization is presented in Figure 7.

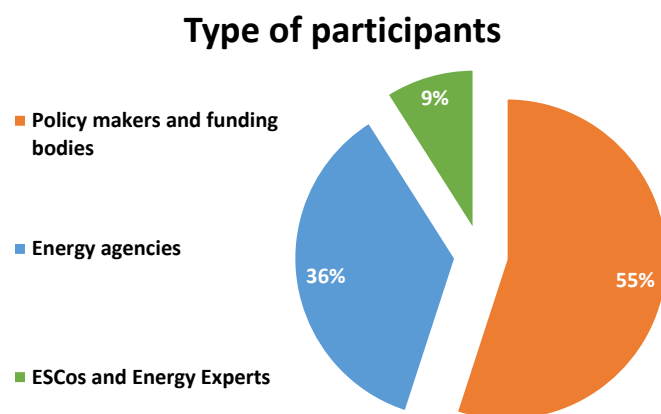


Figure 7 – Second National Observatory in Greece: Shares of participants by type of organisation

PROCEEDINGS OF THE MEETING

Training session

LEAP4SME project talks

Charalampos Malamatenios, CRES, in his welcome speech, introduced the main objective of LEAP4SME project and the importance of SMEs in the energy context with subsequent introduction to the workshop.

Lefteris Giakoumelos, CRES, presented the main results of the LEAP4SME project. Specifically, he made an overview of deliverables D2.1 (Report and infographic of the SMEs mapping), D2.2 (Report on existing support measures for energy audits and energy efficiency in SMEs), D2.3 (Report on energy audits market and main barriers in auditing SMEs), D3.1 (Guideline document on SMEs selection criteria and stakeholders Engagement), D3.2 (Report on SMEs characterization to address an effective policy development), D3.3 (Compilation of good practices) was summarized.

George Goumas presentation was focused on the technical issues faced by SMEs (in Greece and, more general, in the EU level) related to Energy Efficiency issues.

For the energy efficiency in the production process proposed:

- Replacing obsolete and energy-efficient production lines
- Heat recovery
- Improved regulation and control of the production process

For the efficient production of energy proposed:

- Combined heat and power (CHP)
- High efficient and dispersed heat generation

For the energy efficiency in the workplace proposed:

- Improved indoor temperature regulation
- Improved thermal insulation of buildings
- Improved heat / steam pipe insulation
- Fuel change and/or utilization of RES
- High-efficiency lighting systems

Efi Mavrou, CRES, presented some other support schemes / possibilities and a few EU case studies, such as Awards, Energy labelling and Energy promotion activities which are often used to improve the energy efficiency directly or indirectly in SMEs.

Then she presented two EU case studies, the project neZEH45 and the project “Transferring Energy Save Laid on Agroindustry” (TESLA).

Invited talks

Christos Tourkolas, National Energy and Climate Plan (NECP) Committee, presented the main national financing schemes and support mechanisms for SMEs and Energy Efficiency. More specifically, he presented the framework and the objectives of the energy transition and climate neutrality and its importance for micro-enterprises.

As regards the “Fit for 55” package, Dr C. Tourkolas said that the new Greek Climate Law makes reaching the EU’s climate goal of reducing EU emissions by at least 55% by 2030 a legal obligation. At the same time, EU countries are working on a new legislation “package” to achieve this goal and make the EU climate-neutral by 2050.

First the EU’s Legislation “package” Fit for 55 was outlined:

- Revision of the EU Emissions Trading System (ETS): Increase in ETS prices, especially if the proposal to extend the share to heating and transport is adopted.
- Carbon Border Adjustment Mechanism (CBAM): Increase in imported heavy industry products and materials from outside the EU (cement, iron and steel, aluminum, fertilizers and electricity).
- Revision of the Effort Sharing Regulation (ESR): implementation actions to reduce emissions in sectors not covered by the allowance trading mechanism.
- Amendment of the RES Directive (RED II): Promotion of RES in the final consumption sectors.
- Amendment of the Energy Efficiency Directive (EED): implementation of energy saving actions.

- Revision of the Regulation on CO₂ emission performance standards for new passenger cars and new light commercial vehicles: Requirement for the purchase of zero-emission vehicles.
- Revision of the Energy Taxation Directive: Rising energy prices.
- Revision of the Directive on the deployment of alternative fuels infrastructure: promotion of zero-emission vehicles.
- Social Climate Action Mechanism: budget to be given to affected business and households.

Second, the utilization of existing market measures and mechanisms was explored. Funding programs – Action "SAVING - BUSINESS", included in the "Green Transition" Pillar of the Recovery and Resilience Fund, in category A.2 Renovation, and in the Sector "Investments in Energy Efficiency" Funding is provided to existing medium, small and very small businesses are strengthened. All businesses in the sectors of Trade, Services, and Tourism are eligible for the Action.

Competitive energy efficiency improvement processes were analysed referring to National Law. Article 20 of Law 4843/2021 provides for the establishment of a scheme of competitive procedures for the promotion of energy efficiency improvement actions. This is planned – proposed by CRES – to be used in the Regional Operational Programme of Eastern Macedonia – Thrace for the support of the Region's industries (the vast majority of them being SMEs).

The Law 4513/2018 "Energy Communities and other provisions" introduces the institutional framework for the establishment and operation of Energy Communities in Greece, with the aim of promoting social and solidarity economy and innovation in the energy sector, tackling energy poverty, promoting energy sustainability and innovation, producing, storing, self-consumption, distribution, and supply of energy, as well as improving energy efficiency in the end-use at local and regional level. The result of the above framework in Greece is the activation of ~1300 Communities (November 2022), and the installation of photovoltaic plants with an installed capacity of ~784 MW (1100 projects).

“Renewable energy community” (Directive 2018/2001/EU) means a legal entity:

- (a) which, in accordance with applicable national law, is based on open and voluntary participation, has autonomy and is effectively controlled by shareholders or members in the vicinity of renewable energy projects owned and developed by that legal entity;
- (b) whose shareholders or members are natural persons; **SMEs** or local authorities and municipalities;
- (c) the primary objective of which is to provide its shareholders or members, or the local areas where it operates, with environmental, economic and social benefits at community level rather than economic gains.

Observatory session

George Choundris, Ministry of Environment and Energy. At the level of data and data extraction, the dispersion of expertise across the business spectrum should be intensified, a possibility which is passed on and depends on the cooperation of the competent institutional bodies.

Stelios Aliphantis, Ministry of Environment and Energy The NECP foresaw that there will be financing mechanisms for the energy efficiency of industries through Energy Performance Contracting, such as subsidizing loan costs and facilitating access to finance for Energy Service Companies (ESCOs).

The industry faces well-known challenges in financing such as lack of knowledge of technical solutions, lack of human resources capable of dealing with financing and technical issues, and doubt about the actual energy savings that can be achieved by known practices.

The new European framework sets several rules to solve the problems by proposing a regulatory environment, faster access to sufficient capital for innovation, retraining of workers (aiming for 6 million workers), and more open trade for resilient supply (with partnerships). On the regulatory side, the Net Zero Industry Act sets targets for 2030 and also seeks 40% of strategic industrial energy products to be produced within the EU. Investment costs and needs reach €92 billion by 2030, of which €16-18 billion is public funding.

One approach that could help the process is to ensure energy savings through standard contracts with energy saving technology providers, businesses, and insurers. An independent

body that evaluates energy savings should also be involved in this process. The benefits of such a system are that there is confidence in future consumption, given the monitoring for the ESG indicators, while relying on standardized procedures. The most important part of this scheme is that the insurance essentially covers an amount of savings and not kW of energy saved, so an average calculation value is put in to facilitate the parties.

In the field of new policies, competitive processes will also play an important role, which can work for savings in industry. On energy audits, there is still some mistrust as to the qualifications and expertise that auditors must certify consumption and interventions in industry.

In general, the first investment in industry by an ESCO company should be the one that can build trust, and usually it should be in the best-known area - lighting. After that, more serious investments can be launched.

The sectors in general that are most interested in saving are those that have upgraded green marketing (e.g., green products, green processes, etc.). The most realistic scenario in financing is the same funding from industry (as guarantees in an ESCO are not sufficient and should have cash flows for the next investment). In industry, anything with a payback time of more than three years is not eligible. Also, industries are generally understaffed to monitor their energy flows. Thus, EnMS systems essentially provide an advantage for management and will be able to give information about what can be invested at the point of consumption.

George Souris, Ministry of Environment and Energy. He started by recalling that the current – i.e., the one that was submitted to the EU in December 2019 - NECP foresees (inter alia):

- for RES, a rather ambitious target of at least 35% (significantly higher than the European target for RES of 32%). It is worth noting the energy transformation that will be achieved in the power sector, as the share of RES in electricity consumption is projected to exceed 60%;
- to improve energy efficiency, also a quite ambitious target of 38% reduction in gross final energy consumption in respect to the BAU scenario (higher than the corresponding mean European target of 32.5%). In particular, a quantitative target is set for final energy

consumption in 2030 to be 16.5 Mtoe, lower than that recorded in 2017, and with the achievement of cumulative energy savings of 7.3 Mtoe.

The actions that are active or are planned under the NECP are based on seven (7) different thematic areas: 1. Climate Change, 2. RES, 3. Energy efficiency, 4. Security of energy supply, 5. Energy market, 6. Agriculture, Shipping, Tourism, and 7. Research, innovation and competitiveness.

Briefly, the actions for RES, among others, concern the simplification and acceleration of the licensing framework, the optimal integration of RES into the electricity networks, the operation of storage systems, the promotion of electromobility, cogeneration and microsystems of cogeneration in the agricultural and tourism sector, as well as the penetration of RES in the building sector (mainly through the application of heat pumps).

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

1. Concerns were expressed regarding the use of energy performance certificates (EPCs) to measure achieved energy savings. The main disadvantages are related to the inability to accurately quantify energy savings in several interventions, the discrepancy of energy saving estimates compared to actual energy savings, etc.
2. The energy audit “tool” is considered more effective and was recommended to be preferred over EPCs. An alternative proposal is to combine EPC tools, as required by the State aid, and energy audit framework.
3. The problem of the lack of real energy data of the industrial sector (especially from SMEs) was also mentioned, and it was suggested that other environmental certification procedures should be taken into account. The use of energy indicators may be a more effective option to combine energy and environmental criteria.
4. In any case, it is important that the choice of measurement, control and verification system does not excessively increase management costs. It was proposed the design of this system to be carried out based on the expected energy savings.
5. It is important to include provisions for the de-installation of existing equipment.
6. Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.

7. The main challenge to increase the EE in the SMEs is to promote a culture of energy efficiency, hence continuous training, formation and information is necessary.
8. Monitoring (or measurements) must be the first part of an energy management plan of every SME.
9. Simplification of procedures is crucial to the effective engagement of SMEs.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/events/?date=all&organiser=all&type=all&country=greece>

2.5. Italy

2.5.1. National Observatory, 17th May 2022

The workshop was held in Assolombarda (Confindustria Lombardy) Via Pantano, 9, Milan on 17 May 2022, 9:00 – 13:15 CET. The event was hosted by Assolombarda, the regional section of Confindustria (General Confederation of Italian Industry).

The workshop was attended by 23 people and the type of participants is shown in Figure 8.

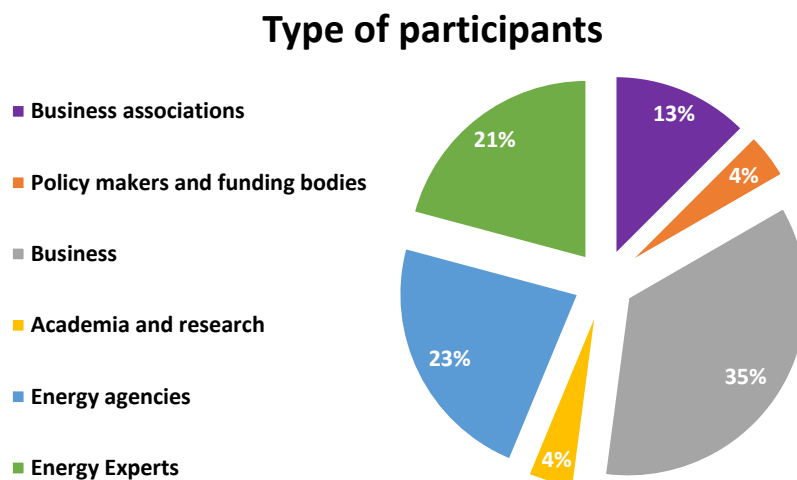


Figure 8 – First National Observatory in Italy: Shares of participants by type of organisation

AGENDA OF THE MEETING

Workshop LEAP4SME: Energy Audits and Energy Efficiency Measures in Small and Medium-sized Enterprises		
8:45- 9:00	<i>Welcome and Registration of participants</i>	
9:00-9:15	<i>Presentation of the LEAP4SME project and introduction to the workshop</i>	Enrico Biele, ENEA LEAP4SME coordinator
9:15-9:30	<i>Presentation of the results of the LEAP4SME project</i>	Carlos Herce LEAP4SME/ENEA
9:30-9:45	<i>Energy consumption, importance of audits and energy efficiency in SMEs</i>	Claudia Toro LEAP4SME/ENEA
9:45-10:00	<i>Barriers and proposals for energy efficiency in SMEs</i>	Vittoria Catalano Assolombarda
10:00-10:15	<i>Mapping of national policies for energy efficiency in SMEs</i>	Chiara Martini LEAP4SME/ENEA
10:15-10:30	<i>The experience of regional calls for the implementation of energy audits in SMEs</i>	Alice Tura Regione Lombardia
10:30	Q&A	All attendees
Osservatorio efficienza energetica nelle PMI / Observatory on Energy Efficiency in SMEs - Moderator Marcello Salvio, ENEA		
11:00-11:15	<i>Introduction</i>	Oronzo Dalloiso - CINEA, European Commission
11:15-13:00	<i>Focus: Energy Diagnosis and Energy Efficiency in SMEs: barriers, opportunities and proposals</i>	Marco Bergaglio, Unionplast Roberto Lanzani, Assofond Dolf Van Hattem, AssoEGE Simona Ferrari, AssoESCo Franco Baretich, Ordine degli Ingegneri della Provincia di Milano
13:00-13:15	<i>Q&A and closing remarks</i>	All attendees

PROCEEDINGS OF THE MEETING

LEAP4SME project talks

The meeting started with an introductory section about LEAP4SME project by ENEA. The speeches focused mainly on the main objectives and first results of the project about SMEs mapping, existing supporting measures for energy audits and energy efficiency in SMEs and good practices. The barriers and type of incentives for encouraging energy efficiency at EU level have been summarized. An overview of the investment plans as a function of the size of the companies and the evidence of the energy audits as drivers for the implementation of EPIAs was discussed (based on several reports of European Investment Bank). A focus on the available data for Lombardy region was developed to show the saving potential and available technologies for obligated large companies and energy-intensive SMEs.

Lastly a detailed review of the Italian incentives for energy efficiency in SMEs (specific and general including also large companies) was presented, with an emphasis in the increase of competitiveness associated to the energy efficiency. Some recommendation to policy makers were proposed.

Invited talks

Vittoria Catalano, Assolombarda (Confindustria Lombardy, the largest territorial association of the entire entrepreneurial system in the country with 6.800 associated firms located in the Provinces of Milan, Lodi, Monza and Brianza, Pavia) explained the main barriers for energy efficiency in SMEs and presented some proposals to overcome them. The main drivers to invest in Energy Efficiency should be 1) the increase of profitability, quality and competitiveness associated with EE, 2) the optimization of the use of energy to boost the decarbonization of the industries, and 3) the non-energy benefits related to environmental, economic and social issues. The current global energy market disruption must be used as a driver to promote the EE, because of directly impact in a reduction of energy consumption (and their uncertainly increasing cost), an increase of innovation and competitiveness.

A specific working group on EE was created in Assolombarda with the objective of raise awareness and promote the EE in target enterprises in Lombardy. This target group present a yearly consumption higher than 0.8 GWhe and 75 kStm³ with a cost of energy >5% of operational costs. They are medium enterprises (between 50 and 250 employees) with high

maturity in terms of energy management (internal energy manager, RES auto production plant, with investment in EE, EAs and EnMS). The main barriers and the proposals for overcome them were presented:

a) Training and information

1. Development of sectoral trainings (online and in person) for the specific EE measures to implement, focused in the integration of energy in the core business of the companies.
2. Encourage the companies (with specific formative roadmaps) to promote the culture of energy efficiency, helping to develop auto-diagnosis and analysing proposals for implementation and evaluation of EPIAs.

b) technical and economic

1. Information to the companies (through impartial organizations) about the Best Available Technologies and the economic access to its financing.
2. Promotion of EE networks to share best practices among companies (including ESCOs).

c) Economic

1. Incentives to the implementation of monitoring systems and ISO 50001 certified EnMs.
2. Rationalizing the incentives to specific objectives and sectoral targets, promoting the more efficient policies.
3. Evaluate the availability to access to cumulative incentives.

d) Legislative

1. Reducing the uncertainties in the interpretation and implementation of the regulation.
2. Harmonize the legislation at regional, national and international levels.
3. Increase the access to all the available tools and mechanisms, with aggregated databases

e) Administrative

1. Simplification and speeding up of the administrative procedures.
2. Speeding up and increasing the transparency on the communication and feedback between PA and the enterprises and organizations.

Finally, a brief presentation of First Energy Check was carried out. This tool has been developed to help the companies to prepare light energy audits in SMEs with proposals and benchmark of general EE measures (<https://firstenergycheck.assolombarda.it/>).

Alice Tura, Lombardy Regional Administration presented the results of regional calls for the implementation of energy audits in SMEs. Two calls have been carried out in order to support the development of energy audits and implementation of certified ISO 50001 EnMS in SMEs. The calls have been included in the Italian transposition of EED (D.Lgs. 102/2014) and co-funded by the Ministry of Economic Development and the Lombardy Region. The first call (1st RC) covered 2016-2019 with 2.27 M€ and the second call (2nd RC) covered 2019-2022 with 2.24 M€. In the 1st RC, 225 SMEs have been engaged (86% EA, 14%EnMS). In the 1st RC more than 50% of the allocated budget was not used, covering the 50% of the costs (up to 5k€ for EA and 10k€ for EnMS). The cost effectiveness (CE) of the EPIAs implemented in the EAs was 1483 €/toe with a total savings of 1682 toe. The potential savings due to identified EPIAs achieve 5100 toe with a CE 4384 €/toe.

The 2nd RC have been a higher participation (292 SMEs – 71%EAs 29%EnMS - using the 99.2% of the funds). The increase of the engagement was mainly due to the next reasons:

- Increase of the threshold of the cost covered: 50% of the costs (up to 8k€ for EA and 16k€ for EnMS).
- Limitation only to SMEs included in NACE B and C
- The 2nd RC included the funding of installation of monitoring tools and supporting to the companies after the implementation of ISO 50001 (in the first steps during the reporting period).
- The 2nd RC was linked to an additional Regional Call to funding the EPIAs and the installation of PV (funded up to 40% and 30%). The funded EPIAs must ensure a reduction of the Energy Performance Indicator (EnPI) of the process up to 2% of the average of last 2 years.
- The 2nd RC is still under reporting period, hence only partial information on the EAs is presented (CE of implemented and identified EPIAs is 2159 and 4635 €/toe respectively).

Roundtable session



Oronzo Dalloiso, CINEA, European Commission, introduced the importance of the EAs as the first step to the implementation of EE in SMEs. The crucial importance of EE is a cornerstone of European Policies (EU Green Deal, EU Industrial Strategy, Fit-for-55 package and REPowerEU). The EE Directive is currently under review (to be approved before 2023). The main aspects still under discussion (regarding the Art.8) are:

- Obligation to carry out an EA (or implement an EnMS) for all the enterprises with a consumption higher than 10TJ and obligation to implement EnMS above 100 TJ.
- Increase the quality of EAs including detailed information about the EPIAs that reduce the energy consumption and the potential of implement RES.

Other aspects under consideration include the analysis of simplified mechanisms for small SMEs with limited consumption, the standards and quality criteria in the EAs and the auditors, and other aspects to increase the implementation of EPIAs included in the EAs.

A new call in LIFE programme oriented to EAs was presented.

Simona Ferrari, AssoESCO (Italian Association of Energy Service Companies and Energy Efficiency Operators, with more than 70 ESCOs associated). The ambitious objectives energy efficiency (in terms of primary and final energy savings) require:

- High coordination between all the stakeholders
- A long-term clear and stable regulatory framework
- Incentive programmes with high liquidity for implementation of EPIAs

The great potential of EE is still enormous, and several mechanisms must be reviewed and adapted from a regulatory point of view (with particular attention to the Energy Communities). The EAs should be considered the first step to encourage the EE and the role of Energy Manager (and its relationship with external ESCOs) in the enterprises should be reinforced to promote the culture of EE.

The benchmark and sectoral studies carried out by ENEA are fundamental for understating the EE market and the BAT. The importance of EPC (Energy Performance Contracts) is crucial in the EE market and the core business of the ESCOs, hence additional promotion of EPC should be beneficial to the system.

Roberto Lanzani, Assofond (Italian Foundries' Association, an energy-intensive sector with more than 1000 companies, 99% SMEs, total production 2Mton) presented the main results of the analysis of 229 EAs (in collaboration with ENEA), with a focus in consumption and implementation and potential of EPIAs. The full report can be found online in Italian. The main barriers to the implementation of EE in the foundry sector are:

- Administrative barriers:

The administrative burden linked to the implementation of EPIAs involves very long and uncertain environmental permission. A simplification of the procedures (such as in the PNRR projects) and an increase of the transparency, should increase the implementation of EPIAs.

- Economic barriers

The SMEs present economic barriers to invest in EE (despite of the importance of energy in the process). Some proposals to unlock the investments could be a) specific incentives for CAPEX investment in core equipment and processes; b) extend the current mechanism (mainly White Certificates) to “soft” EPIAs with a focus on monitoring systems; c) specific incentives to EnMS in SMEs.

Marco Bergaglio, Unionplast (National Union of Plastics Manufacturers, an energy-intensive sector with more than 10,000 companies, 3% of national energy consumption, total production 6Mton). The sector has been extensively electrified in the past 10 years. The proposal for SMEs in the plastic sector depends on their energy consumption:

Non energy-intensive SMEs

- Lack of knowledge of EAs and EPIAs → The sectoral associations must provide information and training in EE.
- Implementation of RES with a focus on self-consumption and Energy Communities → The associations must support the companies in the negotiation of contracts and administrative burden.
- The multi-utilities should play more active role in EE in heat and electricity → There is a lack of confidence in the independence of the solutions/EPC proposed by big ESCOs linked to utilities. Specific obligation to increase the share of RES and EE in SMEs could be proposed.

Energy-intensive SMEs (Consumption > 1GWh)

- Unstable regulation reduces the confidence in public mechanism → Increase the stability of EE mechanism.
- Current policies should be more stable and transparent (high performance cogeneration, White Certificates).
- The incentives and policies must be fully oriented to support the investment on EE and RES (with a flexibilization of legislation) and public bodies (GSE, CSEA) should support third parties if necessary to develop EPCs.
- The current incentives for EE should be linked to competitiveness. Specifically, the incentives for the substitution of core equipment should be linked with real savings instead of other BAT.

Dolf Van Hattem, AssoEGE (Association of Energy Management Experts, with more of 80 auditors certified under UNI CEI 11339:2009). The energy efficiency issues are complex due to the combined involvement of economic, energy, human, environmental and technical aspects. Hence, the SMEs are in an unfavourable situation to face their decarbonization and it is important to support them in multiple ways, such as:

- A good energy management (not necessarily certified) is the beginning of every activity related to energy efficiency and must precede investment.
- A systemic and permanent approach to energy management is indispensable, even for SMEs.
- Good energy management can also lead to non-energy benefits.
- The energy transition is more difficult for SMEs than for larger companies. Therefore, SMEs should be supported with special attention.
- Public support, to be effective, must be permanent, stable, and predictable, and must focus on developing skills and creating a culture of energy management within SMEs.

Franco Baretich, Association of Professional Engineers of Milan Province. The involvement of the SMEs in energy efficiency issues is difficult for different reasons:

- The economic benefits are the main driver of the enterprises. Hence the implementation of EE measures is driven only if they are highly incentive or if the cost

of energy exploits. Hence a planning and consciousness of the relevance of energy is missed.

- Measurement (and monitoring) must be considered the main opportunity to growth to the SMEs. Quantitative information must be the base to the decision maker in the enterprises.
- The incentives must be correlated to the measurement, more than classical economic aspects (i.e. ROI) or benchmark (due the complexity of the variables involved).

Some additional comments to previous speakers:

- Full agreement in the need of permanent, stable, and predictable regulatory framework. Moreover, it will be necessary to increase the flexibility of the regulation with a focus on RES and EE.
- The BAT and KPIs should be considered as a guide and they are useful, but they do not lay the foundations of EE mechanisms
- The role of multi-utilities in the system should be controlled by independent stakeholders.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.
- The EE in SMEs mechanisms should be based on sectoral approaches (with a focus on manufacturing) more than on general programmes.
- The main challenge to increase the EE in the SMEs is to promote a culture of energy efficiency, hence continuous training and information is necessary.
- The EAs can be considered a first step to increase the awareness of energy efficiency.
- The implementation of EPIAs should be supported by incentives (and high-quality EA) and must be included in an internal investment plan of the enterprise.
- There is still a lack of confidence on the external ESCOs and auditors, and in the EPCs that must be faced.

- Monitoring (or measurements) must be the first part of an energy management plan of every SME.
- EnMS (also in simplified version) are very useful tools to promote the EE in SMEs.
- Simplification of procedures is crucial to the effective engagement of SMEs.
- Benchmark and indicators are necessary as reference, but they should be not included as the only foundation of the mechanisms.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/event/national-observatory-training-italy/>

https://www.enea.it/it/sequici/events/leap4sme_17mag2022/leap4sme-energy-audit-policies-to-drive-energy-efficiency

<https://www.assolombarda.it/servizi/energia-e-gas/appuntamenti/dalla-diagnosi-energetica-alle-misure-di-efficientamento-nelle-piccole-e-medie-imprese>

VIDEO PRESENTATIONS

<https://www.assolombarda.it/video/incontri-informativi/energia-e-gas/prima-parte-dalla-diagnosi-energetica-alle-misure-di-efficientamento-nelle-piccole-e-medie-imprese>

<https://www.assolombarda.it/video/incontri-informativi/energia-e-gas/seconda-parte-dalla-diagnosi-energetica-alle-misure-di-efficientamento-nelle-piccole-e-medie-imprese>

2.5.2. National Observatory, 24th May 2022

The workshop was held in CNEL (Consiglio Nazionale premises, Rome. The 24 May 2022, 11:30 – 16:00 CET.

The hybrid workshop was approximately attended by 85 people (25 people in person and 60 online) and their distribution by type of participant is shown in Figure 9.

Type of participants

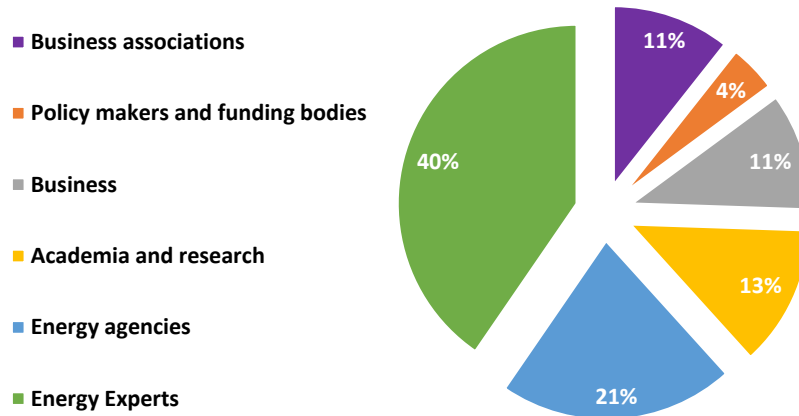


Figure 9 – Second National Observatory in Italy: Shares of participants by type of organisation

AGENDA OF THE MEETING

Observatory on Energy Efficiency in SMEs - Moderator Marcello Salvio, ENEA		
11:30	<i>The activities of ENEA for SMEs: the results of the LEAP4SME project and the launch of the National Observatory</i>	Enrico Biele ENEA
11:50	<i>National Observatory on SMEs: the point of view of the enterprises (part one)</i>	Francesco Napoli, CONFAPI
12:45	Lunch break	
14:15	<i>National Observatory on SMEs: the point of view of the enterprises (part two)</i>	Giulio Avella, CONFCOMMERCIO Barbara Gatto, CNA Fausto Bianchi, Unindustria Lazio
16:00	Q&A and closing remarks	All

PROCEEDINGS OF THE MEETING

E. Biele, ENEA describes project results relative to different aspects, from SMEs characterization in different partner countries to the estimation of their energy consumption

according to different methods, passing from description of main barriers and results of survey devoted both to relevant organizations (150 answers) and SMEs (more than 80 answers) and relevant organizations.

F. Napoli represents **CONFAPI**, the Italian Confederation of Private Small and Medium-sized Industries. Despite the key role of SMEs in Italian economy, many barriers still exist relative to investments in energy efficiency. Currently, high energy prices and sustainability are crucial themes for firms, the first impacting on economic accounts and the second one the possibility to obtain incentives. Thus, firms' energy demand is an issue at the same time quantitative (it generates costs) and qualitative (it would need to be sustainable): energy efficiency, as integrated planning allows to provide the same energy service reducing cost and demand, could provide interesting solutions in both perspectives.

SMEs experience difficulties in investing in energy efficiency mainly due to investment costs and payback time but also to lack of technical competences that limits the understanding of real potential. Overall, this potential is very high and the solution to ease the technical, economic and also cultural barriers could be strengthening the existing tools to improve competences and promote technologies. In particular, training is fundamental, specifically on energy audits and their decisive role relative to the choice to invest in energy efficiency: as shown by a study from the European Investment Bank, the probability to invest in energy efficiency is 1,5 times higher when an energy audit is implemented. To provide effective training and awareness raising campaigns, both to SMEs and to Public Administration employees involved with them, the high heterogeneity of SMEs should be considered, in terms of dimensions, energy consumption, decisional autonomy, property & management and geographical distribution. CONFAPI suggests three key actions: 1) training campaigns for SMEs and PA actors 2) training on importance of energy audits 3) multi target awareness raising campaigns. A pilot project in the campaign Italia in Classe A is mentioned, organized with information and training modules on energy efficiency for employees in building sector, informative days for local PA on existing incentives and energy efficiency communication, and an urban laboratory. Public private partnership is very important and cooperation between firms, research and local institutions is a key success factor.

The Energy Efficiency National Fund could become a useful tool, after the reform announced by the Ministry and if integrated with information and training: SMEs often do not have an energy manager or energy professional and for this reason their competences need a strong support. With their territorial capillarity, SMEs could become accelerators of energy transition process, even now that the political agenda underwent relevant changes due to the Russian invasion of Ukraine (for example, with coal power plants back operational). Only involving in an effective way local PA and firms, the high potential for renewable energy and energy efficiency could be fully exploited, helping at the same time energy security.

G. Avella is the representant of **Confcommercio**, the Italian General Confederation of Enterprises, Professional Occupations and Self-employment. He analyses different subjects: first the increase in energy prices, involving all firms among which those in tertiary sector, and the potential role of energy efficiency; then, the initiatives that have mostly contributed to reduce energy consumption and finally the new plan RepowerEU and the communication on renewables.

The increase in energy prices has started since August 2021, and it has been strongly exacerbated by the conflict. From January to April 2022 the increase in electricity price was between 50% and 80%, when compared with previous year it was between 120% and 140%; for natural gas an analogous pattern was observed. Data on the share of electricity and gas annual expenditure are shown in five typologies of activities in tertiary sector, namely restaurants, bar, grocery and non-grocery stores, hotels.

Building stock is the greatest energy consumer in the EU and Italy, and this clearly concerns tertiary sector. In Italy on 31 million of buildings, more than 60% are in class F or G. Italian tax deduction scheme provided a relevant contribution to reduce energy consumption: this is likely due to the relative simplicity of the administrative burden required as well as the good cost benefit ratio. A recent study by I-COM and ENEA has shown that real estate sales in classes A and B increased by 60% last year, and the measure Superbonus 110% could have impacted on this trend.

Among the actions to reduce energy consumption, REpowerEU was presented on 18 May to support the transformation of EU energy system and introduced a reduction of 13% of energy consumption in 2030. In line with the plan, Confcommercio focuses on three recommendations

to help achieving this target: 1) to introduce building minimum requirements for enhance building renovations 2) to promote energy audits 3) to sustain the penetration of renewables, such as photovoltaic on existing or new buildings. Relative to the second recommendation, the guidance provided by institutions is a key success factor, accompanying firms in the audit implementation.

B. Gatto adds the experience of **CNA**, the Italian Confederation of Craft Trades and Small- and Medium-Sized Enterprises. She concentrates on the energy cost burden for SMEs and the existing and new governmental measures for energy efficiency. Relative to the first point, the energy bill implies a very high-cost burden on SMEs: in particular, in Italy SMEs pays a higher energy cost both relative to EU average and large enterprises. The gap with large enterprises is due both to the lower bargaining power in energy price contracting and to the higher share of general cost in SMEs' energy bill. Energy bill could be structured to better reflect the polluters pay principle. Moreover, SMEs in different sectors have different possibilities to pass through consumers the increases in energy prices; 53% of firms could transfer price increases on final consumer prices, 45% only partially and 8% totally. Firms in service and in food sectors have more difficulties in passing through price increases, and for this reason crisis in specific economic sectors adds to inflationary pressures.

A study developed by CNA and Fondazione Sviluppo Sostenibile shows that energy auto production is a very effective option for saving energy. In this study energy consumption of SMEs in Italy was estimated equal to 16 Mtoe, distinguishing also by energy source (44% natural gas and 37 electricity). According to the results, 63% of SMEs is not aware of its energy performance: some of these invested in energy efficiency but could have projected interventions not completely suitable; only 25% of SMEs has benefitted of incentive for adopting energy efficiency interventions. To increase this share, administrative simplification, both relative to access to incentive and intervention implementation, would provide an important contribution.

Several governmental measures have been introduced to mitigate the price increases, corresponding to 25 billion of Euro, but most of them were not devoted to energy efficiency or renewables. According to CNA it would be useful to introduce specific incentives for SMEs to support auto production, for example with a tax credit of associated investment; indeed, tax

credits have been appreciated by SMEs for their simplicity. Without an energy audit the risk could be oversizing the new plant and thus energy audit could be set a condition to access the new incentive mechanism. Auto production would also reduce energy dependence and relative to this point it is mentioned that building for productive uses are almost 800,000 and are 70% of them is owned by SME. The potential for energy auto production is thus very high: CNA estimated that 400 million m² could be used for photovoltaic panels, reducing the energy dependence by more than 5 billion of m³ of natural gas.

At national level there is a lack of databases on SMEs and for this reason it is difficult to develop specific analyses, and ENEA, together with ISTAT and competent Ministries, could help in this sense. Relative to the energy audit role, CNA does not agree with extending the obligation to SMEs but, since energy efficiency is at the centre of the debate, it is certainly a key moment for training, for example with ad hoc informative days, and providing an economic incentive to firms interested in developing an audit. Communication is certainly key to make SMEs understand the opportunities associated to the improvement of their energy performance, and increase the knowledge of the available tools both in terms of available technologies and existing incentive mechanisms.

UNINDUSTRIA Lazio is one of Confindustria territorial associations and has been created in 2013 as merging of provincial associations and also those of other three municipalities in Latium region. First, **F. Bianchi** observes that different barriers exist for energy efficiency interventions: lack of trained professional, scarcity of raw materials and difficulties in credit access. Second, it is important that lawmakers define in a very clear way what is a SME: for example, in Italy 99% of firms has less than 49 employees, 1% has up to 250 employees and 0,1% more than 250.

Increasing energy prices are an additional and very serious barrier since SMEs currently struggle to remain on the market. Among the 3000 firms associated to Unindustria, some asks for help since the energy bill has become six times higher. In this context, monitoring energy consumption is certainly useful, as well as developing energy audits and increasing self-production with renewable sources. Unluckily, very often bureaucracy timeline to authorize renewable plants in Italy could be longer than one year and this is very problematic for SMEs that are fighting to remain active on the market. There is certainly still margin to increase

renewable penetration (in Italy in 2020 was 20%, in Latium for example 9%), but in this moment the first sustainability should be referred to economics: indeed, the productive sector is hurt by the pandemic as well as by the current war and associated surge in energy prices. A recent success case for Unindustria has been the commitment from Latium region to set aside in 2021-2027 European programming a budget equal to 180 million Euro on energy efficiency in firms, renewable energy sources and circular economy.

SMEs very often do not have the possibility to hire energy managers due to their small dimensions and limited available resources. Institutional training effort is to be appreciated but it should also be considered that, after awareness of their energy performance and improvement opportunities, SMEs would need a toolbox to implement solutions, made of available incentives to sustain energy transition.

Confindustria, the main association representing manufacturing and service companies in Italy represented in this meeting by **E. Bruni**, confirms the difficulties in the productive sectors already described by Unindustria. Moreover, existing incentives such as tax credits or credit transfer for tax deduction scheme are not always easy to access due to high administrative burden. Dialogue between institutions and firms could play a key role, and the approach followed by ENEA with energy audits is certainly a best practice in this field. Nevertheless, and in particular in the current context where firm have great economic difficulties, keeping governmental promises and enduring incentive stability are both fundamental conditions. Already before this crisis, environmental sustainability should go together with economic and social sustainability, and this is now exacerbated by current exceptional conditions.

In Q&A, the useful role of networks of firms is highlighted to compensate the scarcity of technical competences. Energy efficiency communities could help micro firms to become more energy efficient and to increase their contractual power in negotiating energy prices. Where local administrations have been more effective, productive sector activated itself: so existing measures could be more dedicated and creating network is one of the key challenges for the future.

Energy communities are identified as an important option, for example in the Latium region. In this field, as priority condition, it is important for firms to be aware of their consumption, where they are consuming energy and if and where they are wasting it: in a word, investing in

monitoring. To fulfil 2030 and 2050 objectives, it is important to further spread an energy efficiency culture among firms, passing from energy savings to energy efficiency and exploiting in the best way energy resources in firms.

Relative to the trade sector, it is pointed out the role of specific equipment in determining overall energy consumption, for example heat pumps or fridges. Labelling could provide useful information to help decision makers at firm level; it is pointed out that it is important to shorten transition phases and ensure clarity in coordination between different incentive and information tools.

Relative to regional experiences to financially support energy audits, it is important to consider the success factors and barriers of previous experiences: for example, in the past digitalization could have been prioritized relative to energy efficiency, both by firms and policy makers. By contrast, the emergency is currently how to pay energy bills and these difficulties could make energy monitoring and energy efficiency more appealing.

CONCLUSIONS AND RECOMMENDATIONS

The meeting was fruitful and different recommendations emerged from the business associations as well as from the debate:

- With increasing energy prices energy efficiency could become more and more appealing and almost a natural choice: to fully exploit this favourable condition, it is fundamental that institutions provide guidance to firms, relative to several aspects, such as energy audits, existing energy efficiency solutions and incentives.
- Improving firms' awareness on their energy consumption, creating a culture of energy monitoring, is a necessary precondition to plan and implement effective energy efficiency interventions.
- Easing administrative burden is a key condition to improve the access to existing incentives from firms interested in investing in energy efficiency.
- Networks of firms could help to better exploit existing energy efficiency opportunities, both at technological and support measures levels
- In order to further develop energy audits in SMEs not only economic barriers should be considered, for example financing the energy audit costs, but also cultural barriers:

meetings like this could help to establish and consolidate a dialogue with institutions and to collect best practices and proposals.

- The lack on data on SMEs is confirmed and makes difficult developing sectoral analyses: in this field, further efforts from relevant authorities would be needed and useful.

LINKS TO EVENT INFORMATION

https://www.enea.it/it/sequici/events/efficienzaenergeticapmi_24mag2022/l2019efficienza-energetica-nei-settori-produttivi

LINK TO VIDEO

<https://youtu.be/ppB4lnMf0aI?t=5745>

2.5.3. National Observatory, 24th June 2022

The workshop was held in ENEA Portici Research Center, Portici (Naples) on 24 June 2022 , 10:00 – 13:30 CET. The hybrid workshop was attended approximatively by 55 people (19 in person and 36 people online) and their distribution by type of participant is shown in Figure 10.

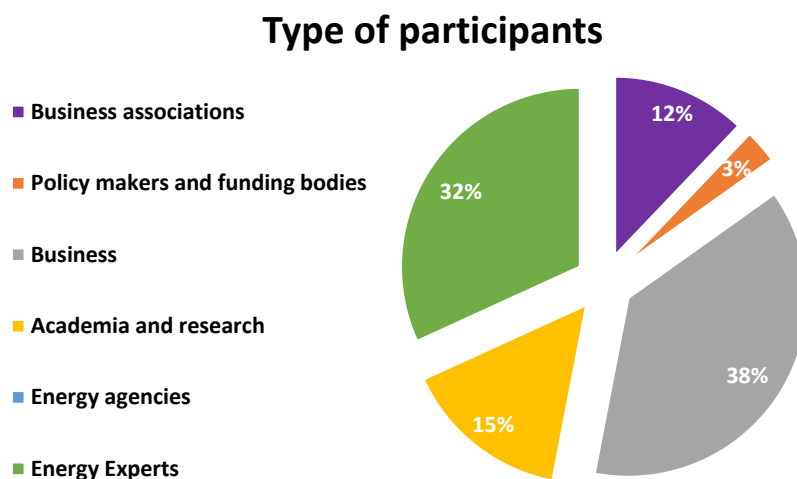


Figure 10 – Third National Observatory in Italy: Shares of participants by type of organisation

AGENDA OF THE MEETING

SESSION 1: The national awareness plan for SMEs and the activities of ENEA at international level		
10:00	<i>Welcome and introduction to the workshop</i>	Ilaria Bertini, ENEA
10:10	<i>Energy efficiency policies for SMEs in Campania Region</i>	Francesca De Falco, Regione Campania
10:20	<i>The awareness plan for SMEs according to Art.8.10 ter of D.Lgs. 102/2014</i>	Marcello Salvio, ENEA
10:35	<i>Introduction to LEAP4SME project and the role of policies for SMEs in Europe</i>	Enrico Biele, LEAP4SME/ENEA
10:50	<i>Presentation of the results of the LEAP4SME project</i>	Carlos Herce, LEAP4SME/ENEA
11:05	<i>The importance of energy audits and monitoring in the SMEs: an overview to the available tools</i>	Claudia Toro, LEAP4SME/ENEA
11:20	Q&A	All
SESSION 2: OBSERVATORY AND PANEL DISCUSSION ON ENERGY EFFICIENCY IN SMES - Moderator Marcello Salvio, ENEA		
11:35	<i>Innovation and internationalisation of SMEs: the ENEA Knowledge Exchange Program and Enterprise Europe Network</i>	Oscar Amerighi, ENEA
11:50	<i>The point of view of the professionals</i>	Vincenzo Triunfo, Ordine Ingegneri di Napoli
12:05	<i>The point of view of the enterprises</i>	Valentina Bagozzi, Confartigianato, Maurizio Frantellizzi, Casartigiani NA Sabatino Nocerino, CNA Campania, Raffaele Cesaro, Confapi Napoli,
13:20	<i>Q&A and closing remarks</i>	All

PROCEEDINGS OF THE MEETING

LEAP4SME project talks

The workshop started with an introductory section about LEAP4SME project by ENEA and the introduction of the awareness plan of energy efficiency in SMEs with a focus on the activities of ENEA related to energy audits. The main programmes and tools to support EE in SMEs

were presented and a summary of the energy consumption and potential of EPIAs in Campania region was showed. The main objective of LEAP4SME project and the importance of SMEs in the energy context have been introduced together with a description of main barriers and results of survey devoted both to relevant organizations (150 answers) and SMEs (more than 80 answers).

An overview of the investment plans as a function of the size of the companies and the evidence of the energy audits as drivers for the implementation of EPIAs was discussed (based on several reports of European Investment Bank). Subsequently, a detailed review of the Italian incentives for energy efficiency in SMEs (specific and general including also large companies) was presented, with an emphasis in the increase of competitiveness associated to the energy efficiency. Some recommendation to policy makers were proposed.

Invited talks

Francesca De Falco, Campania Region (Head of “Energy, Energy Efficiency and Savings, Green Economy and Bioeconomy” Unit) presented the results of regional presented the of regional calls for the implementation of energy audits in SMEs. Two calls have been carried out to support the development of energy audits and implementation of certified ISO 50001 EnMS in SMEs. The calls have been included in the Italian transposition of EED (D.Lgs. 102/2014) and co-funded by the Ministry of Economic Development and the Campania Region. The calls for EAs were linked to complementary programmes for the implementation of EPIAs (with a focus on RES, due to the relative unlocked potential for the implementation of renewables in the region).

The 1st Regional Call (1RC) was a two-phase call, where the proposals were approved must be approved before being funded. In the first phase 540 proposals were submitted and only 79 were funded in the second phase of 1RC (15%). Only the 40% of the allocated funds for EAs and implementation of EPIAs (15M€) were effectively used.

The 2nd RC was extensively modified in order to increase the engagement of SMEs. It was reduced to a one-phase call and the number of funded SMEs growth up to 160 (190 proposal, 84% success rate). The main changes to increase the success were:

- Simplification of administrative tasks (excluding the obligation of present the court records *a priori* to access to the mechanisms).
- Clear procedure that allows to anticipate the expenses with a subsequent pay-off.
- The large enterprises were also available to access to the implementation of EPIAs call. Most of the 50% of funded EPIAs presented a PBT? lower than 3 years.

Despite of the increase of SMEs involved in the 2RC and an increase of the culture of EE, it has been detected a lack of confidence in the results of the audits and the proposed EPIAs. The SMEs tend to have a bias in the proposals from ESCOs in the EA.

Oscar Amerighi, ENEA presented the role of Enterprise Europe Network (EEN) and specific tools from ENEA to support innovation in the SMEs. EEN provides support for Small and Medium-sized Enterprises (SMEs) with international ambitions, and it is funded by EC. ENEA coordinates the BRIDGEconomies EEN node to support SMEs from Campania and Apulia regions. The main activities are support to innovation, development of partnerships and advice for international growth and a focus on opportunities in the fields of sustainability, digitalization and smart grids was presented.

Additionally, three main programmes from ENEA to support the innovation of SMEs were summarised: the [Technology Innovation Atlas](#), the [Knowledge Exchange Program](#) (KEP) and the [Proof of Concept Program](#).

Vincenzo Triunfo, Association of Professional Engineers of Naples Province presented and overview of the barriers and drivers for EE in SMEs. The high heterogeneity of SMEs difficult the implementation of EE and only the enterprises where the energy is between the four higher expenses items faced the development of EAs. Hence, only if the energy consumption is high the enterprises pay attention and detect and opportunity in the EE measures.

The main lever for EE in SMEs is the energy cost. The sudden rise of cost of the energy have obviously increase the attention to EE to all kind of SMEs. Hence, the awareness on energy issues has increased due to the market conjuncture and it is good moment to spread the culture of EE with success.

Finally, several insights from the investment plans, barriers and EnMS have been presented from the surveys from [Digital Energy Efficiency Report 2022](#):

- In the period 2018-2021 the 78.5% of LEs invested in hardware EPIAs against 61.2% of SMEs.
- The main barriers to invest in EE are economic (ROI, access to funding, etc), uncertainties about technologies and regulatory framework, and interactions of EPIAs with productive processes.
- Large companies have better access to monitoring tools, internal dedicated personnel, and certified EnMS (75%, 58% and 42% of LEs vs 56%, 50%, 17% of SMEs). The SMEs generally tend to adopt internal guidelines.
- The EPIAs more interesting for the companies are 1) Productive Process, 2) Lightning, 3) Inverters, 4) Electrical motors and 5) Compressed air.

Valentina Bagozzi, Confartigianato Imprese (the biggest Italian organization of craft trades and micro and small businesses with 1200 offices and 1.5 million of associates). The association directly negotiate the gas and power contracts on behalf their associates. The cost of energy is the main lever to promote the EE. Moreover, EE also drive to a reduction of dependence from volatile external markets. Their estimations provide a scenario (post energy crisis) where the cost of energy will be x 2.5 of 2019 prices. Hence, despite of the economic problems derived from the current energy crisis, it is an opportunity to promote the EE.

The main barriers for the energy efficiency are:

- The current energy bills are rigid to the real consumption. The relative weight of unit cost of bill (taxes, services, system costs, etc.) is higher compared to the unit cost of expenditure for energy or gas. Hence, the reduction of consumption is not fully reflected in the energy expenditure.
- The cost of energy (in €/kWh) is higher to SMEs than in large enterprises.
- There is a lack of monitoring and accountability of the cost of energy in the SMEs. On the one hand, the only monitoring system is based in the energy bills. On the other hand, the bills are not strictly related to monthly consumption with a posteriori balance.

- The incentives are related to the consumption of energy, instead of the quality of the energy consumption. Hence, the incentives are oriented to increase the energy consumption instead of effectively promote the reduction of energy intensity.
- Tax leverage must be considered an alternative to the direct incentive.

The main suggestion to overcome these barriers are:

- The auto production/consumption must be extensively promoted in order to stabilize the cost of energy and reduce the dependence of volatile external markets.
- The current systems of incentives (Regional Calls, White Certificates, Tax relief for energy intensive industries, etc.), based on consumption thresholds, exclude the SMEs from the EE mechanisms. The incentives (including tax reliefs) should be based on the individual case, to fix specific energy saving objectives for each firm.
- The SMEs must be accompanied in a culture of EE for each reality, excluding additional obligations.
- The [Integrated Information System](#) (Sistema Informativo Integrato) from Acquirente Unico is a powerful database that can be used to support the EE policies.

Maurizio Frantellizzi, Casartigiani Napoli (the Section from Naples province of the Autonomous Confederation of Craft Trades Union with more than 200,000 associated entrepreneurs at national level). The energy crisis is a challenge where it is necessary to balance the economic impact on enterprises and families with the undelayable ecological transition. The main barriers/drivers to promote the EE in the SMEs are:

- There is a lack of technical staff oriented to the energy issues in the SMEs. Hence training and formation is necessary as well as independent professionals.
- Digital transition is necessary to address the EE. Thus, the promotion of the implementation of digital tools must be promoted.
- At local level there is a discrepancy between the Best Available Technology with the normative to protect the cultural heritage of urban areas. Hence a compromise between conservation and renovation must be evaluated (mainly in building sector).
- The simplification of administrative procedures is necessary to the implementation of EE policies.

- It is necessary to increase the investment on research and development in EE technologies to increase the long-term competitiveness the SMEs.
- A permanent, stable, and predictable regulatory framework it is necessary at long-term.

Sabatino Nocerino from **CNA Campania** (Campania Region section of Italian Confederation of Craft Trades and Small- and Medium-Sized Enterprises, with more than 600,000 associated at national level) focused his session on importance of construction sector in the EE. Building sector is the most energy intensive sector of the country (in terms of aggregated energy consumption, domestic and non-domestic). Currently, the “Superbonus 110%” scheme must be considered as a good practice to achieve the EE objectives with a revamping of construction sector (dominated by SMEs, highly reduced after 2009 financial crisis). However, due to the administrative and operational aspects of the mechanism, there is a high risk of crash of the entire construction sector. There is a bias about the Superbonus: increase of the cost of materials and equipment (lower than other EU countries without this mechanism), investment of the State that returns in taxes (reducing the underground economy), and it is a long-term strategy to stabilize the construction sector based on EE.

Hence, the construction sector and the buildings must be central in EE policies and all the public and private stakeholders must be coordinated with the government mechanisms.

Raffaele Cesaro, Confapi Napoli (the province of Naples section of Employers' association of Italian small and medium-sized enterprises, with more than 80,000 associated companies at national level). The Superbonus mechanism is a very useful tool to increase the EE of the buildings, with an environmental objective and involving only one productive sector. The promotion of EE mechanisms focused on the SMEs also increase the competitiveness and the productivity of the Italian enterprises, hence the non-energy benefits of EE are promoted more in the SMEs than in construction arise in terms of increased SMEs competitiveness? The first step is to increase the awareness of the SMEs on EE:

- The cost of energy has increased the awareness of the importance of EE, increasing the control of companies regarding the information of their internal costs.
- Monitoring of consumptions (increasing the availability of data) improves the management of the companies, enhancing the competitiveness of the companies.

- The promotion of EAs is another tool to increase the awareness of energy issues in the SMEs.

Two additional proposals to promote the EE in SMEs could be:

- At short term, focus the efforts on tax relief to promote the EE in SMEs
- Increase the synergies by means the creation of EE networks and energy communities in industrial districts.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Clear mechanism with simplified procedures increases the impact of policies focused on the development of EAs and implementation of EPIAs.
- There is a lack of confidence from the enterprises in the regulation mechanism and in the proposed measures in the EAs.
- The main lever for EE in SMEs is the energy cost. Hence, the rise of cost of energy (despite of its correlated reduction of competitiveness) is an opportunity for increase the awareness of SMEs in EE.
- The current energy bills are rigid to the real consumption. The relative weight of unit cost of bill (taxes, services, system costs, etc.) is higher compared to the unit cost of expenditure for energy or gas. Hence, the reduction of consumption is not fully reflected in the energy expenditure.
- There is a lack of awareness and accountability of the expenditure on energy in the SMEs. Hence, training and formation must accompany the implementation of EnMS supporting tools, in order to promote a green and digital transition.
- The incentives are related to the consumption of energy, instead of the quality of the energy consumption. The incentives (including tax reliefs) should be based on the individual case, in order to fix specific energy saving objectives for each firm.
- The SMEs should be accompanied in a culture of EE for each reality.
- The auto production/consumption must be extensively promoted in order to stabilize the cost of energy and reduce the dependence of volatile external markets.
- Energy Efficiency Networks and Energy Communities should be promoted in order to increase auto production and create synergies between firms.

- The construction sector and the buildings must be central in EE policies.
- It is necessary to increase the investment on research and development in EE technologies to increase the long-term competitiveness the SMEs.
- A permanent, stable, and predictable regulatory framework it is necessary at long-term.

LINKS TO EVENT INFORMATION

https://www.enea.it/it/seguici/events/efficienza-energetica-pmi-portici_14giu2022/Portici

LINK TO VIDEO

Training - <https://connect.portici.enea.it/plr6pk96z5qs/>

Observatory - <https://connect.portici.enea.it/pqyztbbpapi/>

2.5.4. National Observatory, 24th November 2022

The workshop was held at the Polytechnic of Bari on 24 November 2022, 17:00 – 19:30 CET. The hybrid workshop was attended approximatively by 70 people (about half in person and half online) and their distribution by type of participant is shown in Figure 11.

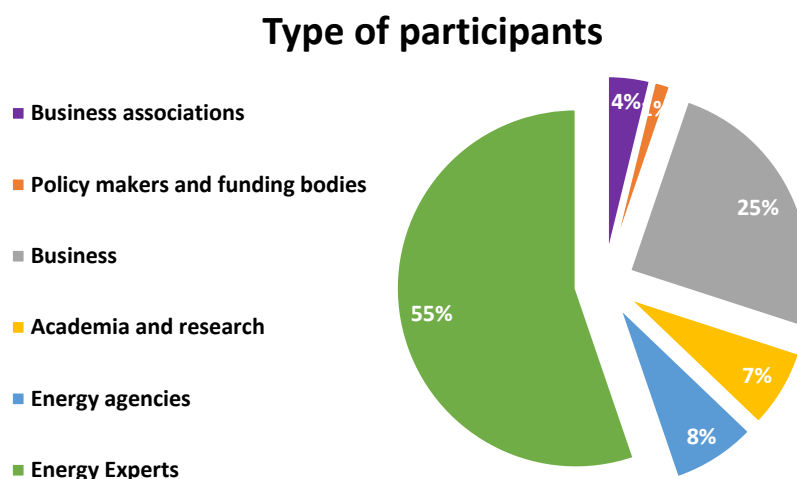


Figure 11 – Fourth National Observatory in Italy: Shares of participants by type of organisation

AGENDA OF THE MEETING

SESSION 1: The national awareness plan for SMEs and the activities of ENEA at international level		
17:30	<i>Welcome and introduction to the workshop</i>	Riccardo Amirante, Polytechnic of Bari Giuseppe Bratta, Productive District "La Nuova Energia"
17:10	<i>ENEA introductive session</i>	Ilaria Bertini, ENEA
17:15	<i>Energy efficiency policies for SMEs in Puglia Region</i>	Alessandro Delli Noci, Regione Puglia
17:30	<i>The awareness plan for SMEs according to Art.8.10 ter of D.Lgs. 102/2014</i>	Marcello Salvio, ENEA
17:40	<i>Barriers and policies for SMEs in Europe: main results from the LEAP4SME project</i>	Enrico Biele, LEAP4SME/ENEA
17:50	<i>The importance of energy audits and monitoring in the SMEs: an overview to the available tools</i>	Claudia Toro, LEAP4SME/ENEA
18:05	<i>Energy Efficiency Improvement Actions for SMEs</i>	Chiara Martini, LEAP4SME/ENEA
18:15	<i>Innovation and internalization of SMEs: the ENEA Knowledge Exchange Program and the Enterprise Europe Network</i>	Oscar Amerighi, ENEA/EEN
18:30	<i>ICT solutions for energy efficiency of industrial processes</i>	Mariagrazia Dotoli, Productive District "La Nuova Energia"
18:45	<i>Innovative solutions for controlling energy flows through the envelope</i>	Francesco Martellotta, Polytechnic of Bari
SESSION 2: Observatory and panel discussion on energy efficiency in SMEs		
19:00	<i>The point of view of enterprises and professionals</i>	Vito Albino, President of ARTI Puglia Paolo Bevilacqua, President of "Impresa più impresa" Enrico D'Aurelio, ASSOEGE Antonio Ficarella, President of ATI sez. Puglia e Basilicata Vincenzo Loverre, Confimi Industria Bari Bat Foggia Productive District "La Nuova Energia"
19:30	<i>Q&A and closing remarks</i>	All

PROCEEDINGS OF THE MEETING

Riccardo Amirante introduced the workshop topics, thanking ENEA, LEAP4SME, ATI and “Apulia Regional Productive District” for supporting the event. In his speech, he introduced the framework on the evolution of global energy demand, highlighting how GDP and energy demand overlap because energy is a prerequisite for economic development. In order to evolve, energy is needed, and it is only in the last decade that this duality has split thanks to the focus on energy efficiency.

Giuseppe Bratta introduced the Apulia Regional Productive District - The New Energy. The district is recognised by the Apulia Region with a regional law and deals with two fundamental topics: EE and renewables and has worked with the Region on some measures relative to the promotion of EE in SMEs (non-repayable contribution from the region for equipment, machinery and plants for the production of renewable energy). Bratta emphasises how fundamental it is at this historic moment to talk about EE for the production sectors and to promote these events, believing that the two fundamental pillars necessary for business development are innovation and a regulatory plan on EE and RES

Alessandro Delli Noci, Apulia Region, expresses the Region's commitment to help companies towards EE and goes into the regional programme that provides 60% non-repayable contributions for SMEs investing in EE and reiterates the importance of raising awareness of EE among companies.

Then a session about the awareness plan for SMEs and LEAP4SME project by ENEA followed. The speeches focused mainly on the barriers and type of incentives for encouraging energy efficiency at EU level. The guide for SMEs to carry out an energy audit realised within the project was also presented. A focus on the available data for Apulia region was developed to show the saving potential and available technologies for obligated large companies and energy-intensive SMEs.

Oscar Amerighi, ENEA presented the role of Enterprise Europe Network (EEN) and specific tools from ENEA to support innovation in the SMEs. EEN provides support for Small and Medium-sized Enterprises (SMEs) with international ambitions, and it is funded by EC. ENEA coordinates the BRIDGEconomies EEN node to support SMEs from Campania and Apulia regions promoting the cooperation among companies within the network. Additionally, three



main programmes from ENEA to support the innovation of SMEs were summarised: the Technology Innovation Atlas, the Knowledge Exchange Program (KEP) and the Proof of Concept Program.

The successive two speeches delved into some technical aspects of energy efficiency: the digitisation of industrial processes and solutions for controlling energy flows through the envelope.

Mariagrazia Dodoli's speech focused on the topic of digitisation for the efficiency of production processes. The energy transition requires investments in technology and human capital to make production processes more flexible, and therefore by favouring the digitisation of companies, it also facilitates their energy efficiency. Green and digital transformation are inseparable challenges there is no sustainability without digitisation. According to IEA estimates, ICT interventions for energy efficiency in SMEs would lead to a 10-30% reduction in their current energy consumption. Software solutions for monitoring and managing machinery performance can optimise the production system with low investment.

In her speech, Mariagrazia Dodoli also identifies three types of barriers to the spread of industrial process automation: national context barriers related to 'uncertainty about the provision of incentives and excessive bureaucratisation', economic barriers as digitisation may require significant investments, and barriers in terms of staff training and skills to manage the new digital processes. However, digitisation would bring several advantages in terms of optimised production and greater production flexibility, reduced costs and increased product quality.

The speech of **Francesco Martellotta** from **Polytechnic of Bari** was focused on innovative solutions for control of energy flows through the envelope of buildings. Some innovative solutions for the control of radiant fluxes are illustrated, such as the use of windows with dynamic shading to control solar radiation with benefits also for the visual well-being of the occupants by making better use of natural light and reducing the use of artificial light. Martellotta also presented airflow control solutions such as motorised opening systems.

Roundtable Session

The roundtable was devoted to collect the point of view of different associations and stakeholders particularly relevant for the regional productive sector.

First, the economic impact of current moment was discussed, also relatively to the next Budget Law with which the role of energy efficiency and renewables will become even more central. Vito Albino – President of Regional Innovation Agency highlighted that the combination of different reactive or proactive policies is used in times of crisis. Currently, due to the intensity of the crisis, the government is giving priority to reactive policies, needed to compensate rising energy costs. We have been experiencing a major transition since more than a decade. Surely lack of investments is an issue, not only at the energy level but also in general terms: the Italian productive sector has one of the lowest increases in productivity at EU level. Of course, in such context energy efficiency could be an important leverage for increasing competitiveness.

Secondly, the challenges of present situation were described by Paolo Bevilaqua – President of Impresa+Impresa Association, working in a manufacturing area and then having a direct perspective on the economic and energy impacts on firm balances. The industrial association has been active in the Bari province for 10 years. Business aggregation creates value, as witnessed by the example of the Industrial Development Area (ASI) managed with public consortium. They are waiting for the implementation decrees to create an energy community using public incentives: in particular, businesses would pool their energy management facilities and recharge stations would be created for cars.

Third, Enrico D'Aurelio – ASSOEGE provided his view specifying that the real challenge for his association is to spread the culture of energy efficiency: in this way benefits would arise both for the single actors, such as reduction of consumption and cost, and the community, such as reduction of emissions. Energy audit should be the first step, and implementing energy efficiency recommendations the second one. According to EED recast, energy audit will become mandatory also for SMEs having energy consumption higher than specific thresholds. This will create a relevant economic barrier related to energy audit costs, but at the same time firms should be helped in understanding the benefits that energy audits can create, also through events like this one. Indeed, it should be considered that with current energy prices

the PBT of some EE measures could be almost immediate. At regional level, to overcome the barriers associated to energy audit costs, it has been proposed to adopt a new financial support measure.

Then, **Arcangelo Tarantino, District Committee** highlights that firms take decisions according to the cost-benefit ratio and provides an example from a hotel having developed an energy audit. The hotel consumes 1,300 toe/year and it has used a call for bids in Basilicata region to introduce a small photovoltaic system, cogeneration plant, solar films and systems for decreasing sanitary water consumption. Now, due to current energy prices they are assessing the possibility to turn the cogeneration plant off: such a decision should be based on carefully assess the cost benefit ratio (Euro spent / kWh saved). This shows very well that a problem of trust also exists: indeed, the energy auditor calculated that cogeneration is still favourable according to the cost benefit ratio, but nevertheless the plant was turned off. Moreover, the same hotel is planning to introduce a 650 kW photovoltaic plant and to improve the building envelope: without the regional call, the PBT for such measures would have been too higher for considering their implementation. A final point is associated to the introduction of ISO 50001 certification, which has a favourable cost benefit ratio since it allows more awareness on energy use at site level.

Finally, **Nicola Lanza** provides a concrete example from the sector of agricultural SMEs. Introducing energy efficiency measures in family-run business could be even more problematic in the current period, when they are struggling to continue their daily activity. The awareness on energy consumption is likely to be very low in this context, for example relative to the knowledge on kWh consumed per year on pumping. Due to newly introduced support measures, such as tax credit schemes, there is an increasing attention on monitoring consumption levels. Since Chambers of Commerce are able to reach these firms also at NACE code level, a project to put qualified professionals in touch with business in order to help them to develop energy efficiency tailored solutions. To effectively reach small agricultural firms, public institutions should go towards private actors; incentives to improve energy efficiency are linked to such a process, to sustain energy audits and introduce related recommendations. At regional level, there have been proposals on support measures on energy audits and monitoring systems, and they are likely to be included in the next programming period, as already mentioned.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Two fundamental pillars necessary for business development are innovation and a regulatory plan on EE and RES
- Importance of raising awareness of EE among companies
- Favouring the digitisation of companies also facilitates their energy efficiency. For example, software solutions for monitoring and managing machinery performance can optimise the production system with low investment.
- Barriers should be faced at multiple levels: national, in terms of uncertainty about the provision of incentives and excessive bureaucratisation; economic, in terms of investment requirements; staff, with needs for training and skills to manage the new digital processes.
- Lack of investments is a relevant issue in the productive sector and energy efficiency could be an important leverage for increasing competitiveness.
- Business aggregation could create value and helping the development of sustainable solutions such as energy communities, provided that public incentives are available.
- A relevant economic barrier is related to energy audit costs, but at the same time firms should be helped in understanding the benefits that energy audits can create.
- Problems of trust in energy auditors' recommendations also exist. Chambers of Commerce could play a useful role in reaching firms and put qualified professionals in touch with them to help developing energy efficiency tailored solutions.
- Introducing ISO 50001 certification could have a favourable cost benefit ratio since it allows more awareness on energy use at site level.
- Adopting energy efficiency measures in family-run businesses could be even more problematic in the current period when several businesses are struggling to continue their daily activity.

LINKS TO EVENT INFORMATION

https://www.enea.it/it/sequici/events/efficienzaenergeticapmi_24nov2022/Bari_24nov2022

LINK TO VIDEO

<https://www.youtube.com/watch?v=lonuhYuhQzw>



2.5.5. National Observatory, 26th January 2023

The workshop was held at the University of Basilicata, Potenza on 26 January 2023 , 15:00 – 18:30 CET. The hybrid workshop was attended approximatively by 130 people and their distribution by type of participant is shown in Figure 12.

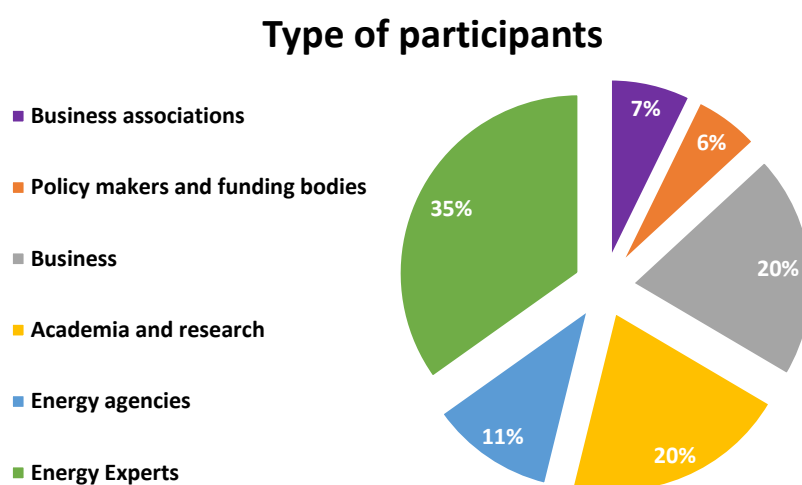


Figure 12 – Fifth National Observatory in Italy: Shares of participants by type of organisation

The observatory roundtable session has been included in the conference organized by ENEA for the presentation of ATENEA4SME tool developed by ENEA in collaboration with the University of Basilicata dedicated to carrying out an energy audits in SMEs.

PROCEEDINGS OF THE MEETING

The conference featured talks by **Ilaria Bertini**, ENEA, **Mauro Mallone** for the Ministry of Environment and Energy Security followed by an introductory talk by the Basilicata Region on energy efficiency for SMEs. Ilaria Bertini introduced the workshop presenting the main activities of ENEA related to the EE in SMEs, highlighting the role of the SMEs as drivers in the energy transition and **Marcello Salvio**, ENEA then introduced the ENEA awareness plan for energy efficiency in SMEs.

The conference then focused on the ATENEA tool developed by ENEA in collaboration with the **University of Basilicata**. **Angelo Masi**, Pro-rector for Research and Technology Transfer, and **Paolo Renna**, Pro-rector for functions concerning the coordination of quality

assurance for teaching and research of the University of Basilicata presented the agreement between ENEA and UNIBAS. **Giacomo Bruni** of ENEA then introduced more details related to the ATENEA tool, explaining its main features, the data needed and the outputs that can be obtained then some practical application cases and an introduction of the environmental aspects was provided by **Antonio D'Angola, Antonio Ferraro, Milena Marroccoli and Antonio Telesca** from the **University of Basilicata**.

Once the presentation of the tool was concluded, the conference then focused on more general topics related to energy efficiency in SMEs. This session opened with **Enrico Biele** introducing the main objective of LEAP4SME project and the importance of SMEs in the energy context. He provided a description of main barriers and support measures for SMEs in Italy and Europe. During his speech, he also provided details on the Covenant of Companies program, a pilot program led by the European Commission (DG Energy) that offers guidelines and technical assistance to European companies to help them set and implement goals to decarbonize their businesses. Then **Maurizio Tolve, Order of Engineers Province of Potenza** and **Telmo Petrelli, Order of Engineers Foundation Potenza** addressed the issue from the perspective of professionals. They emphasized the important issue of training and new skills required of energy experts to guide companies in the energy transition process and the need for engineers and professional orders to be more involved in working tables in energy policy making.

The roundtable was aimed to interact with representatives of SMEs at local level in order to collect their point of view on energy efficiency in SMEs. Basilicata region, although less relevant in terms of number of firms than Italian Northern regions, has a productive sector worth to be analysed.

Francesco D'Alema, Confindustria Basilicata, highlights that energy has been a sensitive issue for the industrial sector as well as on national agenda since many years. Recently, energy supply changes and corresponding prices' surge have contributed to the transition process, which should be based on sustainability principles. Basilicata region, has to play its role with its peculiar productive structure, having a high importance of fossil fuel production. In particular, a subsidised finance measure for energy efficiency, devoted to both large enterprises and SMEs, has been launched and is currently in its third year. The following

figures characterise its third edition: the call was open about 30 days, 349 applications were received overall for the different types of companies, total investments amounted to 82 million euros, with a request for regional funding of over 50 million, out of a financial availability (already refinanced) equal to slightly less than 20 million euros. This confirms the high interest of the regional industrial sector in energy efficiency, and that it is a key theme in the clean energy transition process mentioned above. The tool presented by UNIBAS and Enea is very useful in this regard as it helps to assess different industrial processes and understand where the inefficiencies are and how they can be solved. After having promoted renewable energy, Basilicata region is also assessing the opportunity to promote hydrogen, but it should be clarified whether the industrial sector is ready. Finally, it seems important to emphasize that the reasons that lead companies to invest in energy efficiency are economic ones, especially in a period of high energy prices, but also the barriers are often economic, in particular relative to the ability to bear the cost of an energy audit and to invest in energy efficiency. Changes in the companies obligated to develop an energy audit, as planned in the EED recast process, could be problematic. In this sense, it would be useful that EU member countries introduce direct support measures, for example similar to the tax deductions available in Italy for the residential sector.

Ida Leone, Energy Cluster Basilicata, explains that the cluster is aimed to try to systematise all the energy efficiency opportunities and support measures that are available for companies. Even in a context highly specialised on fossil energy production, as is the case in Val d'Agri, the tool presented today could be very useful, as it allows companies to increase their awareness on where and how energy efficiency can be improved. Clean energy transition, with the increasing role of renewable energy sources, does not eliminate the need to reduce waste, not only of energy but also of other depletable resources such as water. The Cluster will certainly promote the ENEA-UNIBAS tool. It should be affordable for everyone, including micro enterprises: after the compilation effort, the result in terms of consumption awareness and energy efficiency recommendations should be easily understandable. According to the speaker, there is a strong need for training specialised professional figures who can support companies on energy issues. The Cluster has already activated an ad hoc service, but continuing to provide advice and to train support figures in this area is very important.

Nicola Fontanarosa, Confimi Industria Basilicata, highlights that the policies to make energy a competitiveness factor of firms have been lacking in the last decades. Indeed, a clear long term energy policy has been absent and at the same time energy has always been assigned a relevant role in tax collection, increasing the cost borne by enterprises. Therefore, since companies are asked to carry out an energy audit and implement energy efficiency measures, it is also important for public policies to play their part. The emergency created by the war in Ukraine has finally focused attention on the issue of energy emergencies, not only related to the payment of energy bills but also to the inadequacy and obsolescence of distribution and transmission networks and to the need to streamline the bureaucratic system associated to investment processes. Energy audits have focused the attention mainly on consumption, thus on the quantity of energy, while the quality of energy (in terms of disturbances, interruptions, and micro-interruptions) should also be considered. Indeed, a low energy quality can discourage companies from introducing automation and digitisation in their production processes. Confimi will promote the tool, being already engaged on similar issues, particularly in introducing energy monitoring actions on a sample of 15 companies located in the main industrial areas of Matera province. Finally, it is emphasized that the development of energy communities is also an important area for companies, which will have to work together with the residential sector and other consumers. Industrial districts at sectoral level, such as in the textile or food sector, could also have a high potential in this context.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Key role of energy efficiency in the clean energy transition process and importance of direct support measures
- Need for assessment tools to allow SMEs to better understand the structure of their energy consumption and how energy efficiency can be improved.
- Need for assistance when the recast of EED will be transposed in national law, particularly relative to energy audit and changes in the obligated parties.
- In the clean energy transition process all wastes should be reduced, not only relative to energy but also to other depletable resources such as water.
- Strong need for training specialised professional figures who can support companies on energy issues.

- Need to streamline the bureaucratic system associated to investment processes.
- The quality of energy (in terms of disturbances, interruptions and micro-interruptions) should not be neglected compared to quantity, since low energy quality can discourage investments in automation and digitalisation.

LINKS TO EVENT INFORMATION

<https://www.eventi.enea.it/tutti-gli-eventi-enea/gli-strumenti-per-l-efficienza-energetica-nelle-piccole-e-medie-imprese-il-tool-enea-unibas-dedicato-alle-pmi.html>

LINK TO VIDEO OBSERVATORY

<https://www.youtube.com/watch?v=lonuhYuhQzw>



2.6. Malta

2.6.1. National Observatory, 23rd June 2022

The event intends to address two project activities: trainings and observatory. The training session included a presentation on the LEAP4SME project and main results by EWA and an overview of policies in place for energy efficiency and energy auditing. Moreover, Malta Enterprise, the entity responsible for managing financing schemes and assisting businesses, has also delivered a presentation on the schemes available for SMEs to implement energy efficiency measures.

The event was held at The Xara Lodge, Rabat on the 23rd June 2022, 08:30 – 11:00 CET. The event was hosted by the Energy and Water Agency and twenty-three participants⁹ attended the event.

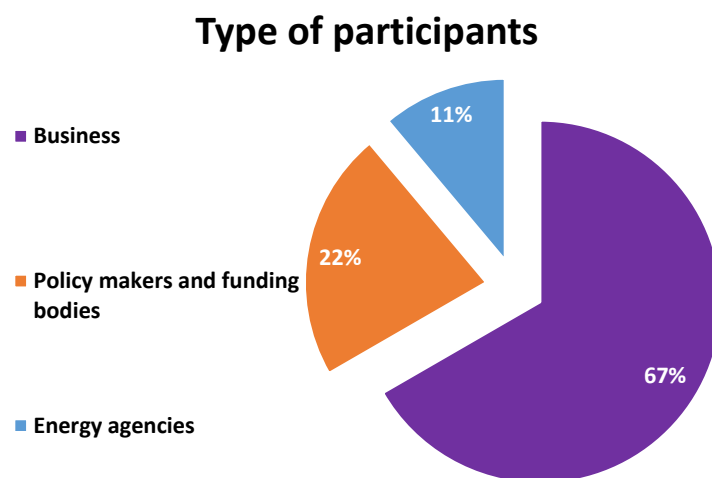


Figure 13 – First National Observatory in Malta: Shares of participants by type of organisation

⁹ This figure includes employees from the Energy and Water Agency and invited speakers.

AGENDA OF THE MEETING

Energy Efficiency in SMEs – LEAP4SME Training		
08:30 - 09:00	Breakfast and Registration	
09:00 - 09:05	Introductory Speech	Matthias Agius, LEAP4SME/ EWA
09:05 - 09:30	LEAP4SME project results	Matthias Agius, LEAP4SME/ EWA
09:30 - 09:45	Energy Auditing	Lorna Taliana, EWA
09:45 - 10:00	Malta Enterprise Schemes	Karl Herrera, Malta Enterprise
10:00 - 10:15	Case Studies	Luke Satariano, MCL Components Ltd. Ian Attard Portughes, Portughes Dry Cleaning
10:15 - 10:20	Feedback and Q&A	N/A
Energy Efficiency in SMEs – LEAP4SME National Observatory		
Duration	Purpose	Speaker
10:20 - 10:50	Discussion – Energy and Water Management in SMEs	N/A
10:50 - 11:00	Roundtable and feedback	N/A

The workshop was attended by 14 SMEs and 9 key stakeholder representatives. The distribution of participants by their type of organisation can be found in Figure 13.

PROCEEDINGS OF THE MEETING

Matthias Agius, EWA introduced the main objective of the LEAP4SME project and the importance of SMEs in the energy context with subsequent introduction to the workshop. Mr Agius then continued with presenting the main results of the LEAP4SME project achieved so far. Presentation from **Lorna Taliana, EWA**, was focused on the importance of energy auditing and efficiency measures in SMEs. In her presentation, Ing. Taliana also explained the energy audit process and provided information on schemes available for SMEs to undertake an energy audit.

Karl Herrera from **Malta Enterprise** provided an overview of the schemes being made available for SMEs to undertake energy efficiency investments. Mr Herrera's presentation was followed by two case study presentations from Mr Luke Satariano from MCL Components Limited and Mr Ian Attard Portughes from Portughes Dry Cleaning who gave an overview of the energy efficiency measures implemented by their companies and their respective benefits.

For the National Observatory an open guided discussion with SMEs and key stakeholders was held. When asked “Where does water and energy consumption rank within your priorities? Why?” most participants noted that energy consumption ranks high within their priorities while highlighting the correlation between energy consumption and costs (yielding to less profits). Some of participants added that energy management is key for long-term growth and a sustainable future. During the discussion most participants agreed that energy management is one of the easiest things that an enterprise can regulate (e.g. an enterprise cannot regulate market driven prices such as shipping) and thus wasting it does not add value. Therefore, it helps enterprises to effectively offset the disadvantage that Maltese enterprises face due to insularity.

When asked about the kind of investments SMEs are inclined to make and the investments perceived as too complex, SMEs said they are more inclined to make ‘off the shelf solutions’ since these are one of the easiest things to do. SMEs said that they would also consider investments in heating and cooling systems. SMEs added that they are not willing to invest in invest in measures with an ROI greater than three (3) years. Another important aspect mentioned by SMEs is cashflow management especially if enterprises are going to apply for schemes and loans as this may adversely affect their cashflow.

Participants noted that it would be helpful if besides highlighting the cost-recommended measures, in the energy audit report the energy auditor provides information on available financial aid that the enterprise may apply for. SMEs noted that in some cases they perceive the installation of electric vehicle (EV) infrastructure as complex investments. Investments to upgrade equipment and machinery for more efficient ones can also be viewed as complex investments.

When asked about possible improvements needed to help SMEs become more sustainable, SMEs highlighted that that current systems and practices sometimes are too rigid and may

limit SMEs efforts to become more sustainable in their operations or products that they develop. Therefore, increased flexibility in terms of funding (perhaps even increase in the co-financing rates) and further awareness on available financing schemes was recommended. SMEs highlighted that they view government aid as an important factor in their quest to become more sustainable.

Moreover, SMEs noted that it would be helpful if they have a reference point who can guide SMEs through the available financing opportunities and assist SMEs during the application process. Participants also noted that since most funding takes place on a reimbursement basis, it would be best if entities set targets to affect reimbursement following measure implementation so as to limit adverse impacts on the company's cashflow. Participants also added that timing and planning are one of the major barriers SMEs face in their quest to become more sustainable. The importance of dialogue within the enterprise as well as outside the enterprise was also noted. The importance for SMEs to sell their sustainability philosophy and convince their team of the enterprise's common goal was highlighted.

CONCLUSIONS AND RECOMMENDATIONS

The main conclusions and recommendations that arise from the workshop are:

- Energy and water management is one of the highest priorities for SMEs and this may provide SMEs an opportunity to maintain competitiveness with other international companies (due to Malta's insularity).
- SMEs are not willing to invest in investments with a Return on Investment (ROI) greater than three (3) years.
- SMEs would benefit from having a one-stop-shop which can guide them through the available financing schemes available and assist them through the application process of such schemes.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/about/>

<https://energywateragency.gov.mt/smes-share-experiences-in-leap4sme-conference/>



2.6.2. National Observatory, 24th November 2022

The scope of the event was to address two project activities: trainings and observatory. The training session included a presentation on the LEAP4SME project and main results by EWA and an overview of policies in place for energy efficiency and energy auditing. This was followed by two case study presentations from Ms Jessica Gerada, representing Gerada Construction and Mr Michael Xuereb representing 19 Rooms. Both company representatives gave an overview of their company operations and the measures taken to become more sustainable. The presentations were then followed by a panel discussion on the subject. Panel members included Mr Joseph Darmanin from the Malta Development Bank; Mr Steve Ellul an advisor at the Ministry for the Environment, Energy and Enterprise; Ms Nadia Grech representing Malta Enterprise; Mr Aldo Formosa representing the Measures and Support Division; and Ing. Charles Buttigieg representing the Energy and Water Agency.

The event was held at Villa Arrigo, Naxxar on the 24th November 2022, 10:30 – 14:00 CET. The event was hosted by the Energy and Water Agency in collaboration with the Malta Chamber of SMEs and twenty-seven participants attended the event¹⁰.

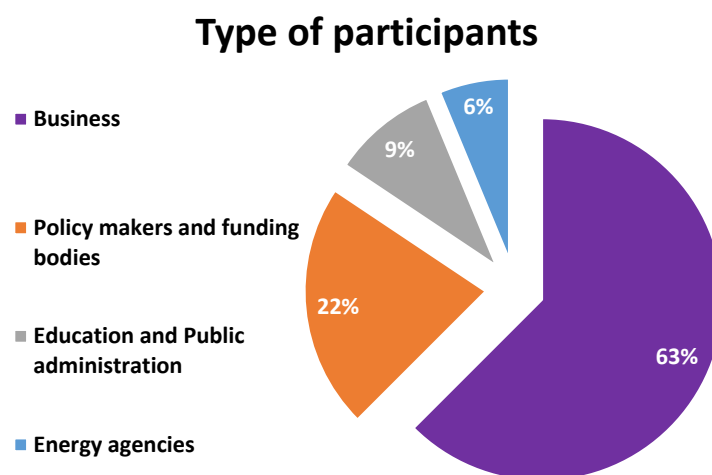


Figure 14 – Second National Observatory in Malta: Shares of participants by type of organisation

¹⁰ This figure includes employees from the Energy and Water Agency.

AGENDA OF THE MEETING

Achieving profitability through sustainability – LEAP4SME Training		
10:30 - 11:00	Welcome coffee	
11:00 - 11:10	Introductory Speech	Lorna Taliana, LEAP4SME/ EWA
11:10 - 11:30	LEAP4SME presentation	Lorna Taliana, LEAP4SME/ EWA
11:30 - 11:50	Case Study: 19 Rooms	Michael Xuereb, 19 Rooms
11:50 - 12:10	Case Study: Gerada Quality Construction	Jessica Gerada, Gerada Quality Construction
12:10 - 12:30	Feedback and Q&A	
Achieving profitability through sustainability – LEAP4SME National Observatory		
Duration	Purpose	Speaker
12:30 - 13:00	Panel Discussion	Joseph Darmanin, Malta Development Bank Steve Ellul, Advisor at the Ministry for Environment, Energy and Enterprise Nadia Grech, Malta Enterprise Aldo Formosa, Measures and Support Division Charles Buttigieg, Energy and Water Agency

The workshop was attended by 20 SMEs and 7 key stakeholder representatives. The distribution of participants by their type of organization can be found in Figure 14.

PROCEEDINGS OF THE MEETING

Lorna Taliana, EWA introduced the main objective of the LEAP4SME project and the importance of SMEs in the energy context with subsequent introduction to the workshop. Ing. Taliana then continued with presenting the main results of the LEAP4SME project achieved

so far and gave an overview on the importance of energy auditing and the energy audit process as well as efficiency measures in SMEs.

Jessica Gerada, Gerada companies, a family business, explained the advantages of Climablock, an innovative construction system to build walls in reinforced concrete capable to integrate in one solution the mechanical resistance capability of the concrete with thermal isolation capability of expanded polystyrene. One of the advantages of the Climablock is that it increases the U value by 80%. Hence, in the long run one will save money as less energy for heating and cooling is required. Another advantage of the Climablock is that the material used is fireproof.

She noted that one of the biggest challenges faced when switching from conventional concrete bricks to the Climablock, was to convince workers to use this different material. She explained that now there is a nine-floor office building and an Aparthotel being built using the Climablock. Jessica also noted that in terms of capital costs, the Climablock costs around twice as much as conventional concrete bricks however, there is definitely a return on investment in the long-term.

Michael Xuereb, 19 Rooms, gave a brief overview of their business ethos: 'Exceptional service', 'Sustainability' and 'Local knowledge', and how their focus from the very start was to make business sustainable. Mr Xuereb explained how they wanted their business to achieve accreditation and opted for the 'Green Key' certification, an international certification accrediting European businesses.

He explained that the business keeps striving to find ways to reduce energy, for example if rooms are vacant, they make sure that water heaters are switched off. They also strive to source local ingredients for food and drinks, where possible. He added that they have set up a communication campaign with their guest to involve them in the process and make them part of the solution. He also highlighted the importance to reduce consumption so as to have less of an impact, rather than consuming as much as we want and offsetting efforts afterwards.

He also noted how their participation in local and community events together with investments in sustainable practices has resulted in increased customer acquisition, reduced costs and

staff retention. Mr Xuereb highlighted that purpose is the key for a business to become more sustainable and this eventually leads to profits.

For the National Observatory a panel discussion with key stakeholders was held. Mr Joseph Darmanin from the Malta Development Bank explained the schemes currently available for SMEs which include the SME Guarantee Scheme ensuring better access to finance, financing new investment and business transfers, and offering an 80% uncapped guarantee and a loan up to 750,000 euro. There is 80 million euro available for this. There is also the Guarantees Co-lending scheme for SMEs risk sharing facility and co-lending between the MDB and accredited commercial banks on a 50:50 basis. It offers better access to finance, low interest rates and longer repayment periods. (100 million euro available for this). SMEs would need to apply with their commercial bank which include HSBC, BOV, APS and FIMBANK.

Steve Ellul, Ministry for the Environment, Energy and Enterprise, commented that businesses which are not working on sustainability are risking not remaining relevant a few years down the line. He mentioned all the financial assistance available to SMEs and how important it is to keep supporting businesses both financially and by hand holding so they can make this leap into sustainability.

Nadia Grech, Malta Enterprise, delved into the Smart and Sustainable scheme which provides financial support to undertakings for investments that lead to more sustainable and digitalized processes, which in turn leads to the enhancement of competitiveness of the enterprises through the optimised resource use. Nadia explained that the eligible investment under the scheme should target one of the five categories – Waste minimization, sustainable materials, energy efficiency, water efficiency and sustainable digitalisation. This scheme is now allocating up to 100,000 per application (in line with De Minimis regulation) and encourages projects addressing operations or old machinery which are not efficient.

Aldo Formosa, Measures and Support Division Interventions, presented the Business Enhance and the schemes that the unit takes care of, particularly those targeting buildings and the reduction in primary energy demand. He highlighted the importance of energy audits, as these give direction to the areas that need to be addressed. Mr Formosa noted that businesses need to reduce the primary energy demand of the building by at least 30% for the

business to be eligible for funding. He explained that there are other schemes targeting machinery, equipment and retrofits that SMEs may benefit from.

Charles Buttigieg, Energy and Water Agency, outlined the role of the Stakeholder Support Unit (SSU) within the agency and the initiatives being carried out by the unit relating to SMEs such as the Micro SME visits scheme aimed to guide micro-SMEs identify energy and water saving potential within their business. He also mentioned the MERCA project which aims to support small and medium retail establishments that sell food and beverages to identify and carry out improvements that should lead to more sustainable operations.

CONCLUSIONS AND RECOMMENDATIONS

The main conclusions and recommendations that arise from the workshop are:

- Purpose is key for a business in its quest to become more sustainable. Becoming sustainable may lead to a business earning more profits.
- In order to be impactful in their actions, businesses must prioritise reducing energy consumption first rather than prioritising offsetting measures.
- There are various schemes available for SMEs, some of which SMEs may not be aware of.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/event/2nd-national-observatory-training-malta/>

2.7. Poland

2.7.1. National Observatory, 26th May 2022

The National Observatory include the presentation of LEAP4SME project and main results (by KAPE), and the overview of official policies for energy efficiency and energy audits made by National Environment Fund.

The workshop was held in Józefów close to Warsaw on 26 May 2022, 11:00 – 15:10 CET. The event was hosted by Department of Electrical Engineering, Częstochowa University of Technology and Institute of Environmental Protection-State Research Institute. The overall number of participants was 23 and their distribution by type of organisation is shown in Figure 15.

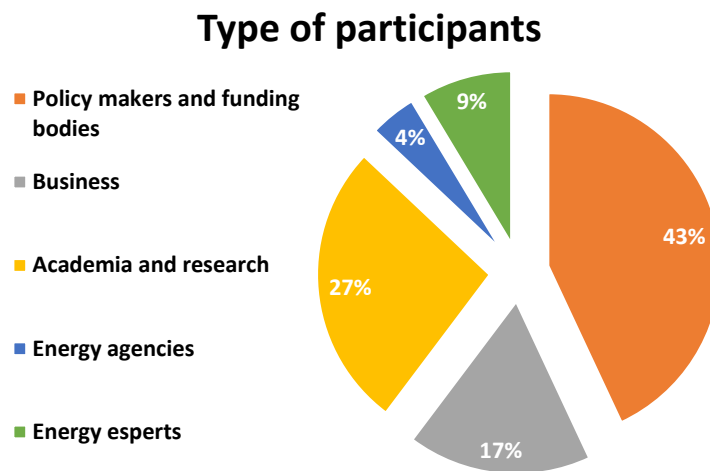


Figure 15 – First National Observatory in Poland: Shares of participants by type of organisation

AGENDA OF THE MEETING

National Observatories		
11.00 – 11.10	Introduction	Anna Dylağ
11.10 – 11.30	Technical problems faced by SMEs in the area of energy efficiency	Anna Dylağ (KAPE)
11.30 – 12.00	National financing schemes AND support mechanisms for energy efficiency and SMEs	Artur Michalski (NFOSIGW)
12.00 – 12.20	Caffe break	
12.20 – 12.40	Other support systems (awards, energy labelling, promotional activities, etc.) - case studies in the EU	Anna Dylağ (KAPE)
12.40 – 13.00	Presentation of significant results of LEAP4SME	Anna Dylağ (KAPE)
13.00 – 13.30	Outreach methods to raise awareness of efficiency and the benefits of improving it.	Anna Dylağ (KAPE)
13.30 – 14.00	Q&A	

PROCEEDINGS OF THE MEETING

The National Observatory was held during a conference on the transformation of the energy sector, which brought together important politicians, CEOs of state-owned companies, scientists, and entrepreneurs.

Anna Dylağ presented the main objective and main results of the LEAP4SME project and the importance of SMEs in the energy context. This was followed by an overview of the results, including the SME Mapping Report and Infographic, Report on Existing Support Measures for Energy Audits and Energy Efficiency in SMEs, Report on the Energy Audit Market and Main Barriers to SME Auditing, Report on SME Characteristics for Effective Policy Development, and Compilation of Good Practices.

The presenter's statement focused on the importance of energy efficiency for SMEs, among other things, the evidence of energy audits as drivers for EPIA implementation.

Another topic focused on the barriers and type of incentives for energy efficiency at the EU level.

During the National Observatory, **Artur Michalski**, vice president of the **National Fund for Environmental Protection and Water Management**, presented a detailed overview of Poland's incentives for energy efficiency in SMEs (specific and general, including large

enterprises), with a focus on competitiveness gains related to energy efficiency. Some recommendations for policymakers were offered.

During the discussion with the meeting participants, it was emphasized that the main barriers to the development of energy efficiency among businesses are:

- Low awareness of businesses in EE,
- Low awareness of energy management in enterprises,
- Unstable legal regulations and state energy policy,
- The small number of programs that are geared towards increasing energy efficiency among SMEs,
- High level of complexity of tools (grants, loans),
- Underdeveloped market for ESCO-type solutions.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.
- The EE in SMEs mechanisms should be based on sectoral approaches (with a focus on manufacturing) more than on general programmes.
- The main challenge to increase the EE in the SMEs is to promote a culture of energy efficiency, hence continuous training & information campaigns are necessary.
- The EAs can be considered a first step to increase the awareness of energy efficiency.
- The implementation of EPIAs should be supported by incentives (and high-quality EA) and must be included in an internal investment plan of the enterprise.
- There is still a lack of confidence on the external ESCOs and auditors, and in the EPCs that must be faced.
- Monitoring (or measurements) must be the first part of an energy management plan of every SME.
- EnMS (also in simplified version) are very useful tools to promote the EE in SMEs.
- Simplification of procedures is crucial to the effective engagement of SMEs.

- Benchmark and indicators are necessary as reference, but they should be not included as the only foundation of the mechanisms.

LINKS TO EVENT INFORMATION

<https://sn-proenergo.pl/>

2.7.2. National Observatory, 12th December 2022

The National Observatory includes a presentation of the LEAP4SME project and its main results (by KAPE) and the issue of effective management of energy and gas consumption and costs, as activities that can significantly affect the competitive advantage of companies on the Polish market.

The workshop took place online on 12 December 2022 from 10:00 - 15:00 CET. The event was organised by the Union of Entrepreneurs and Employers (ZPP). The total number of participants was 48 and their distribution by type of organisation is shown in Figure 16.

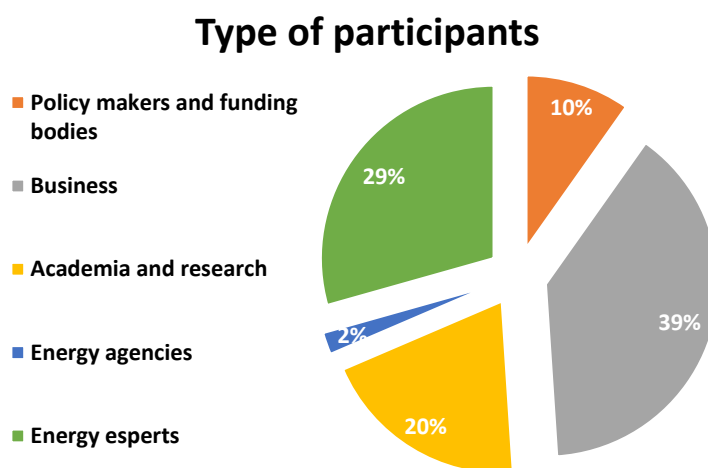


Figure 16 – Second National Observatory in Poland: Shares of participants by type of organisation

AGENDA OF THE MEETING

National Observatories		
10.00 – 11.15	Introduction	Dominika Taranko (ZPP)
10.15 – 11.15	Available tools for energy/gas contracting on markets	Leszek Prachniak (Polish Power Exchange)
11.15 – 12.00	Technical problems faced by SMEs in the area of energy efficiency	Anna Dyląg (KAPE)
12.00 – 12.30	Presentation of significant results of LEAP4SME	Anna Dyląg (KAPE)
12.30 – 12.45	Break	
12.45 – 13.30	Control of consumption parameters, consumption profile, distribution costs	Maciej Michalski, (PGE S.A.)
13.00 – 13.30	How to carry out a comprehensive energy efficiency improvement in an industrial plant	Rafał Sieńczak (SIEMENS)
13.30 – 14.00	Q&A	

PROCEEDINGS OF THE MEETING

The National Observatory held an online conference on the sudden increase in electricity prices for entrepreneurs. This conference brought together entrepreneurs, politicians, CEOs of state-owned companies and entrepreneurs.

The conference was opened by **Dominika Taranko, Association of Entrepreneurs** and Employers with an introduction to the topic of the energy transition and a discussion of the dynamic situation in the European energy market.

The next speaker was **Leszek Prachniak, Director of the Exchange Operations Office at the Polish Power Exchange**, who presented the issue of energy contracting, discussed the available tools for contracting energy/gas on the markets operated by POLPX and ways of building a purchasing strategy for market participants.

In turn, **Anna Dyląg, KAPE** presented the main objective and main results of the LEAP4SME project and the importance of SMEs in the energy context. She then reviewed the results, including an SME mapping report and infographic, a report on existing support measures for energy audits and energy efficiency in SMEs, a report on the energy audit market and the main barriers to SME audits, a report on SME characteristics for effective policy development

and a compilation of good practices. The presenter's talk focused on the importance of energy efficiency for SMEs, including evidence of energy audits as drivers for EPIA implementation. Another topic covered by Anna Dyląg was barriers and incentives for energy efficiency at EU level.

Maciej Michalski, Corporate Clients Department from the Polish Energy Group, spoke at the conference. His speech concerned the modelling of energy and gas consumption and influencing daily fluctuations in energy costs by controlling consumption parameters, consumption profile and distribution costs.

The series of presentations was concluded by **Rafał Sieńczak, SIEMENS**, whose speech concerned building competitive advantage through decarbonisation. It focused on how to carry out comprehensive energy efficiency improvements in an industrial plant and the business models used to do so.

This was followed by a discussion with the speakers and conference participants.

During the discussion with the participants, it was highlighted that the main barriers to energy efficiency development among companies are:

- Low awareness of companies regarding EE and the use of tools dedicated to this,
- Low awareness of energy management within companies,
- Unstable legal regulations and state energy policy,
- Small number of programmes targeting energy efficiency among SMEs,
- High complexity of tools (grants, loans),
- Underdeveloped market for ESCO-type solutions.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Energy efficiency policies must be based on a stable, stable and predictable regulatory framework.
- EE mechanisms in SMEs should be based more on sectoral approaches (with an emphasis on manufacturing) than on general programmes.

- The main challenge for increasing EE in SMEs is to promote a culture of energy efficiency, so continuous training, formation and information is needed. It is important that people experienced in carrying out energy audits discuss concrete examples for specific industries.
- The EA can be considered as a first step towards increasing energy efficiency awareness.
- The implementation of EPIA should be supported by incentives (and high-quality EA) and must be included in the company's internal investment plan.
- There is still a lack of trust in external ESCOs and auditors, and EPCs to contend with.
- Monitoring (or measurement) must be the first part of any SME's energy management plan.
- EnMS (also in a simplified version) are very useful tools to promote EE in SMEs.
- Simplification of procedures is crucial for effective SME involvement.
- Benchmarks and indicators are necessary as a reference but should not be included as the sole basis for mechanisms.

LINKS TO EVENT INFORMATION

<https://www.youtube.com/watch?v=Vonapw8auno>



2.8. Portugal

2.8.1. National Observatory – Online 21st June 2022

The 1st National Observatory meeting was held online, via MS Teams, on June 1st 2022, from 14:30 until 16:00 (GMT). The overall number of external participants was 15 and they were distributed by type of organisation as shown in Figure 17.

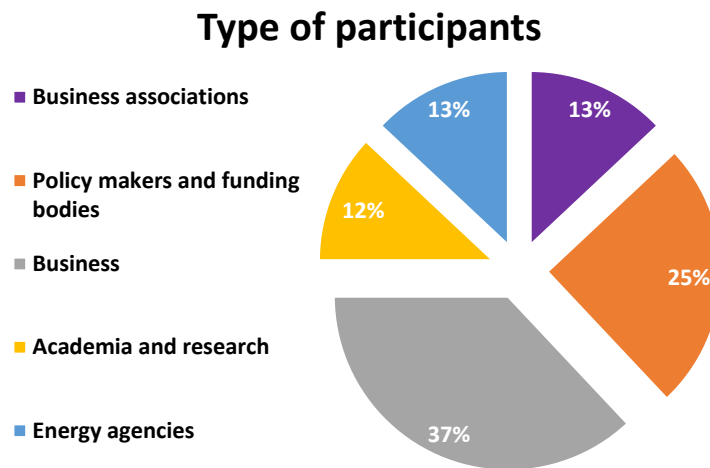


Figure 17 – First National Observatory in Portugal: Shares of participants by type of organisation

AGENDA OF THE MEETING

Agenda of the National Observatory		
14:30 – 14:45	Participant’s reception and first words	Rui Fragoso – Head of the Projects’ Department, ADENE
14:45 – 15:00	LEAP4SME project presentation	Ana Cardoso – Project Manager, ADENE
15:00 – 15:30	Call to Action presentation	Paulo Calau – Coordinator of the Industry and Circular Economy Area, ADENE
15:30 – 16:30	Debate Space	All

PROCEEDINGS OF THE MEETING

Rui Fragoso, ADENE, started by welcoming the participants, providing a brief overview of the project's relevance to ADENE (as a national energy agency) and to SMEs, and explaining the objective of the national observatory meetings. After this, **Ana Cardoso, ADENE**, presented LEAP4SME project, namely its structure, goals, and lines of work.

Finally, **Paulo Calau, ADENE**, explained to the participants during his presentation that we would like to have two specific inputs from their side:

1. Validation of the first draft of the non-energy benefits KPIs, that was briefly presented during the meeting.
2. Identification and sharing of best practices and activities that take place in their enterprises and are related to energy efficiency and non-energy benefits.

CONCLUSIONS AND RECOMMENDATIONS

Overall, the merit and interest of the project were recognized by the observatory participants. Following this, from the interventions of the stakeholders these conclusions and recommendations stand out:

SMEs representatives

- The disparity in size and core business of national SMEs must be recognized in a project of this nature.
- SMEs often lack economic resources to carry out audits that are not required by law.
- Resource efficiency is undoubtedly a path to follow, complementing energy efficiency. A comprehensive assessment, which goes beyond energy efficiency, is interesting and useful for companies. Resource efficiency audits should have well-defined objectives and targets.
- Auditors must be trained, so that they can assure compliance with the technical requirements that a resource audit needs.

Policy makers representatives

- There are already financing schemes directed to SMEs in resource efficiency, namely, to support the installation of photovoltaic panels.

- The new support schemes planned, within the scope of what is defined by the European policies, presuppose the energy consumption of the installation monitoring, as well as carrying out the legally foreseen energy audits. The attribution of support will always be subject to compliance with the established rules. There is still space to grant incentives, recognizing that this is the only way to make the necessary qualitative leap.
- Connectivity and technological transformation will be another focus of public policies.
- The need to create a pool of auditors was reinforced, if duly trained and recognized.
- It is concluded that the identification of energy efficiency measures in an audit is not enough: support is needed for the implementation of the identified measures.

2.8.2. National Observatory, 10th October 2022

The 2nd National Observatory meeting was held online, via MS Teams, on October 10th 2022, from 14:30 until 16:00 (GMT). The overall number of external participants was 15 and they were distributed by type of organisation as shown in Figure 18.

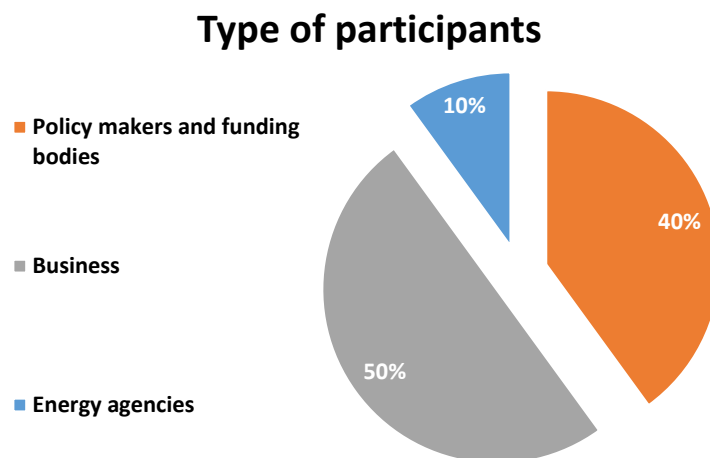


Figure 18 – Second National Observatory in Portugal: Shares of participants by type

AGENDA OF THE MEETING

Agenda of the National Observatory		
14:30 – 14:45	Participant's reception and first words	Paulo Santos – Head of the Management Systems and Certification Department, ADENE
14:45 – 15:00	Presentation of the new set of proposed KPIs	Ana Cardoso – Project Manager, ADENE
15:00 – 15:30	Framing of the new set of KPIs in resource efficiency and water-energy nexus in auditing	Paulo Calau – Coordinator of the Industry and Circular Economy Area, ADENE Filipa Newton – Coordinator of the New Systems Area, ADENE
15:30 – 16:30	Debate Space	All

PROCEEDINGS OF THE MEETING

Paulo Santos, ADENE, started by welcoming the participants, providing a brief overview of the project's relevance to ADENE (as a national energy agency) and to SMEs.

After this, **Ana Cardoso, ADENE**, presented the new set of proposed KPIs. The presentation firstly clarified the concept of non-energy benefits, also by giving some concrete examples. Later, it was stated that the goal is to quantify energy savings through a resource consumption analysis during an audit, namely by integrating the water, water-energy nexus, and materials dimension over an energy audit. However, the starting point to the necessary quantification should be the definition of suitable KPIs, capable of creating a basis for decision making and efficiency measures implementation, supported by solid data. The proposed set of KPIs, divided into six areas (water consumption, water intensity, water sources, water cost, material use, and water-energy nexus) was briefly presented.

Subsequently, **Paulo Calau, ADENE**, presented ADENE's path regarding the circular economy research and projects, highlighting the gains of a resource efficiency audit, over a simple energy audit. Finally, Filipa Newton (Coordinator of the New Systems Area at ADENE) gave some concrete examples within the Portuguese legislation of the relevance of this integrated approach, namely on the National Energy Saving Plan 2022-2023 and the National Plan for Energy and Climate 2030.

CONCLUSIONS AND RECOMMENDATIONS

The presentation of the new set of resource efficiency KPIs was very well received. Overall, from the interventions of the stakeholders the following conclusions and recommendations stand out:

Public Companies representatives

- It should be checked the weight of the water consumed in the audited companies: not all sectors will be affected in the same way.
- The definition of an indicator must always have reason associated with it: indicators with reduced impact must not be considered; but these will not be the same for all companies.
- The number of new indicators must not be excessive.

Funding programmes representatives

- The new set of KPIs can help with the evaluation of applications.
- There is an interest of the funding programmes to assist in the implementation of the new resource efficiency audits.

Regulator representatives

- This new set of KPIs could also be used as the basis of a new methodology for accounting the entities' water and carbon footprint.
- It was suggested the division of the enterprises by clusters for benchmarking purposes, to compare what is comparable.
- It was questioned whether the water scarcity and absence ratios should also be included in this analysis.

2.8.3. National Observatory, 28th February 2023

The 3rd National Observatory meeting was held online, via MS Teams, on February 28th, 2023, from 15:00 until 16:30 (GMT). The overall number of external participants was 21 and they were distributed by type of organisation as shown in Figure 19.



Type of participants

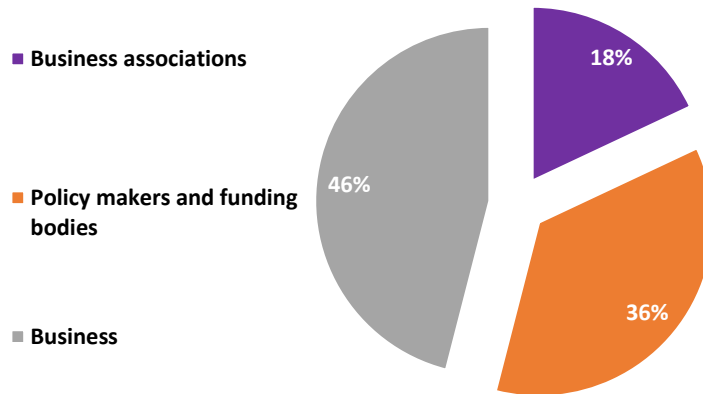


Figure 19 – Third National Observatory in Portugal: Shares of participants by type of organisation

AGENDA OF THE MEETING

Agenda of the National Observatory		
15:00 – 15:15	Participants' reception and first words	Marina Alves – Head of the Strategy, Policy and Projects Department, ADENE
15:15 – 15:30	Presentation of the main results of the LEAP4SME project	Ana Cardoso – Project Manager, ADENE
15:30 – 16:15	Debate	Moderated by Paulo Calau (Coordinator of the Industry Area, ADENE) and Filipa Newton (Coordinator of the Innovation Area, ADENE)
16:15 – 16:30	Conclusions and next steps	Vanessa Faia – Specialist from the Mobility and Water-Energy nexus Area, ADENE Ana Cardoso – Project Manager, ADENE

PROCEEDINGS OF THE MEETING

Marina Alves, ADENE, started by welcoming the participants, providing a brief overview of the project's relevance to ADENE (as a national energy agency) and to SMEs.

After this, **Ana Cardoso, ADENE**, presented the main results of the project, focusing on ADENE's work package (WP6 - Analysis of further benefits and impact scenarios), namely the new set of proposed KPIs. The presentation firstly gave a brief overview of the status of energy audit programmes in LEAP4SME countries. Then, the concept of "resource efficiency" was presented, including the new set of proposed KPIs that is divided into six areas (water consumption, water intensity, water sources, water cost, material use, and water-energy nexus). Afterwards, the rationale behind the quantification framework was also quickly explained, as well as the way the new KPIs will be applied during an audit (including the main barriers that may be encountered).

Subsequently, it was opened a debate space moderated by **Paulo Calau, ADENE**, and **Filipa Newton, ADENE**.

Finally, the session included some final remarks and future steps shared by **Vanessa Faia, ADENE** and Ana Cardoso.

CONCLUSIONS AND RECOMMENDATIONS

The results from the debate session were very interesting, giving an important overview of the stakeholders' perceptions, namely regarding the new KPIs use, standing out the following:

Public Companies representatives

- The indicators should combine energy efficiency with carbon neutrality and reduced environmental impact, which are now known targets to public companies. Indicators that include CO₂/m³ are perceived as interesting.
- Moreover, it could be appealing to define levels of energy consumption from renewable origins, setting targets and rewarding the achievement of these targets.

Business representatives

- It is necessary to sufficiently evaluate the feasibility of measuring/collecting the adequate information to calculate the new set of KPIs.
- Systems as "smart meters" are easier to be widely accepted to collect data. However, it is good practice to present the work to be developed to the top management, before starting the audit and the data collection process.



- The use of the proposed set of KPIs should be done step by step, starting with minimal requirements. The first task will be to present the importance of measurements, as well as the basic indicators, and then start the auditing process always in direct contact with the companies involved.
- Energy, water, and materials are three dimensions with direct impact in business' costs. Nevertheless, the material dimension is probably the one that will require more work, namely, to explore the green public procurement issue.
- There is a known lack of qualified auditors that can act over the energy, water, and materials dimension at the same time. So, a qualifying framework is also necessary.
- SMEs have limited human resources and financing, that can be obstacles to the implementation of audits in general.
- A “resource audit” can be used as leverage to access financing schemes, namely if the companies that undertake this type of audits receive extra credit when applying for financing programmes.

2.9. Slovakia

2.9.1. National Observatory, 29th June 2022

The 1st National Observatory meeting was held on 29th June, 2022 from 9:00 to 12:00 (CET) in Premises of Slovak innovation and energy agency, Bratislava, and online.

The workshop covers two different types of activities: training and observatory. The training session include the presentation of LEAP4SME project and main results (SIEA), and the overview of official policies for energy efficiency and energy audits made by the Energy Department of the Regional government that hosted each workshop.

The aim is to provide relevant information to SMEs, SME associations and energy efficiency organisations of benefits of energy audits and implementation of energy efficiency measures.

The workshop was attended by 27 people in hybrid mode and the type of organisation of the participants is shown in Figure 20.

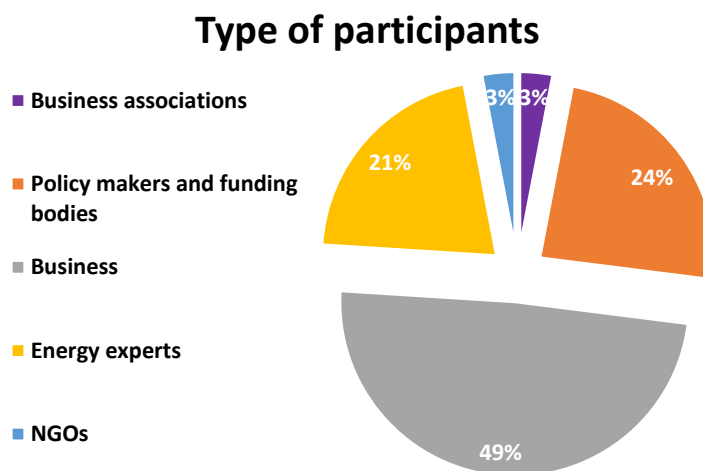


Figure 20 – First National Observatory in Slovakia: Shares of participants by type of organisation

AGENDA OF THE WORKSHOP

Agenda of the National Observatory		
9:00-9:15	Welcome and Introduction of project LEPA4SME and its pertinent results	Stanislav Laktiš, SIEA
9:15-9:45	Energy consumption in SMEs, energy audits/measures and monitoring system of energy efficiency – new functionalities	Ján Magyar, SIEA
9:45-10:15	Barriers to energy audits and EE in SMEs	Ladislav Piršel, alocons, s.r.o.
10:15-10:30	Coffee break	
10:30-11:00	Case study <i>MTS Humenné</i> Application of concept “Energy as service” as a solution for effective energy supply in SME	Andrea Pancotti Slovenské elektrárne, energetické služby / energy services
11:00-11:15	LEAP4SME mapping of national policies and support schemes	Ján Magyar, SIEA
11:15-11:45	Advanced technologies and local sources – application for buildings in SMEs	Daniel Hrčka, Viessmann , s.r.o.
11:45-12:15	Discussion and round table (observatory) on energy efficiency in SMEs	

PROCEEDINGS OF THE MEETING

LEAP4SME project talks

Stanislav Laktiš, SIEA, introduced the main objective of LEAP4SME project, pertinent results and the importance of SMEs in the energy context with subsequent introduction to the workshop.

Ján Magyar, SIEA, presented the main results of LEAP4SME project. Specifically, an overview of deliverables D2.1 (Report and infographic of the SMEs mapping), D.2.2 (Report on existing support measures for energy audits and energy efficiency in SMEs), D.2.3 (Report on energy audits market and main barriers in auditing SMEs), D 5.1 (Capacity building implementation plan). Then he introduced energy audit definition and its importance in SMEs. While data on the representation, structure and importance of SMEs is abundant, information on how much energy SMEs consume is not usually tracked at the national level. Ján Magyar, explained the circumstances: "Until now, it has been mainly large enterprises that have been under scrutiny, or at some point in time, enterprises with high energy consumption, which were

required by European regulations and national legislation to have energy audits carried out and to report information from the audits on their consumption and recommended measures to national information systems on a regular basis, so that consumption reductions could be evaluated, savings potential estimated and, if necessary, effective support could be set up accordingly. Small and medium-sized enterprises are obliged to send audit data to the information system for energy projects receiving European support. In Slovakia, we estimate the potential for energy savings in SMEs at 15 to 18%, based on an analysis of data from energy audits in SMEs, which are recorded in the energy efficiency information system. He stressed that the importance of the audits is increasing in times of rising energy prices, as they provide businesses with information on energy saving opportunities and the economic parameters of the measures needed to achieve them.

The Information System for Energy Efficiency (ISEE), which has been operated by SIEA since 2014, is also intended to help large and small enterprises to record data on their own consumption and to put them in order. At the workshop, the benefits of the new Energy Audit module were presented, which from February 2022 allows for easier data provision and will also help with emission calculations or economic evaluation. Its main benefit is a unified methodology for calculating emissions and a realistic view of the potential for individual savings.

Presentation of **Ladislav Piršel** was focused more in details on barriers of SMEs in energy efficiency implementation. The lack of comprehensive data on energy consumption is a serious barrier among SMEs, especially for medium-sized enterprises. This is evident from the analysis Barriers and Needs of SMEs in Energy Efficiency prepared by the project partner agencies. Ladislav Piršel informed about the methodology and results of the international survey at the event. For all types of SMEs, economic reasons, i.e., lack of investment and measures beyond the financial capacity of the enterprise, are important barriers. For medium-sized enterprises, the long payback period of the measures is also a significant constraint, with a timeframe of more than 5 years being out of their interest. Further findings are published in the analysis on energy efficiency measures in industry and services published by the European Executive Agency for Climate, Infrastructure and Environment (CINEA) in 2021.

Invited talks

The event also included presentations by **Andrea Pancotti, Slovenské elektrárne energetické služby** and **Juraj Hrčka, Viessman**, with practical solutions for businesses in the use of renewable energy sources that will help them to reduce the cost of electricity production and at the same time bring co-benefits such as improved working environment, reduced carbon footprint and energy independence.

Observatory session

The observatory session was held as open discussion among the participants. They had also opportunity to provide feedback on the project and the state of energy efficiency in SMEs in Slovakia. In the final discussion, participants of the first LEAP4SME workshop also outlined recommendations for the project to address in the future. Several agreed that the interest in audits would increase if it were included as an eligible cost in support schemes. The promotion and implementation of systematic and comprehensive solutions in enterprises should also be an important topic, and special attention should be paid to model energy solutions for SMEs to give a clear idea of what an energy audit and the implementation of measures entails. The energy audit handbook, which is being finalised these weeks by experts from the LEAP4SME project teams, should also provide a basic framework and inspiration in this respect. Further meetings should also discuss ways to improve the quality of the work in the implemented measures, for example by inspections by the state authority, and to what extent the passing of a compulsory professional examination could be a guarantee of the quality of the contractor's work.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Interest in audits would increase if it were included as an eligible cost in support schemes.
- The promotion and implementation of systematic and comprehensive solutions in enterprises should be an important topic.
- Special attention should be paid to model or pilot energy solutions for SMEs to give a clear idea of what an energy audit and the implementation of measures entails

- Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.
- To improve the quality of the work in the implemented measures, for example by inspections by the state authority, and to figure to what extent the passing of a compulsory professional examination could be a guarantee of the quality of the contractor's work.
- The EE in SMEs mechanisms should be based on sectoral approaches (with a focus on manufacturing) more than on general programmes.
- The main challenge to increase the EE in the SMEs is to promote a culture of energy efficiency, hence continuous training and formation is necessary.
- The monitoring system of energy efficiency should be used more widely and the data provided in more details. Data should be monitored and reported for the SME sector (not monitored currently).

LINKS TO EVENT INFORMATION

<https://www.siea.sk/o-energetickej-efektivnosti-malych-a-strednych-podnikov-na-slovensku-vela-nevieme-medzinarodny-projekt-leap4sme-to-pomoze-zmenit/>

LINK TO VIDEO INFORMATION

https://www.youtube.com/watch?v=EHghp1bCRKU&ab_channel=SieaBratislava

ARTICLE IN PROFESSIONAL MAGAZINE

https://leap4sme.eu/wp-content/uploads/2023/02/SIEA-1-TZBsk_2022_LEAP4SME.pdf

2.9.2. National Observatory, 15th May 2023

The 2nd National Observatory meeting was held on 15th May, 2023 from 9:00 to 12:45 (CET) in Premises of Slovak innovation and energy agency, Bratislava, and online.

The workshop covered two different types of activities: training and observatory. The training session included the presentation of LEAP4SME project, overview/analysis of barriers and needs of SMEs and main results/outcomes from the project (SIEA), and the insight to potential solutions based on energy audits in SMEs for situations often indicated by SMEs.



Slovak innovation and energy agency organised second of series of workshops within project LEAP4SME focused on energy efficiency in SMEs. Workshop took place on 15th of May.

The aim is to provide information on SMEs to relevant representatives of decision-making bodies of state administration, associations of SMEs together with SMEs themselves and organizations dealing with energy efficiency in SMEs about the benefits of energy audits and the further implementation of recommended measures to save energy and increase energy efficiency in enterprises. to SMEs, SME associations and energy efficiency organisations of benefits of energy audits and implementation of energy efficiency measures.

The observatory part was focused on discussion on official policies for energy efficiency and energy audits in SMEs and possibilities of legislative regulations to react on barriers, needs and potential solutions for SMEs.

The workshop was attended by 16 people in hybrid mode who were from different types of organisations, as shown in Figure 21. In particular, the Slovak Environment Agency participated, several Ministries were also involved, namely the Ministry of Economy of the SR, Ministry of Environment of the SR, Ministry of Investment, Regional Development and Informatics of the SR.

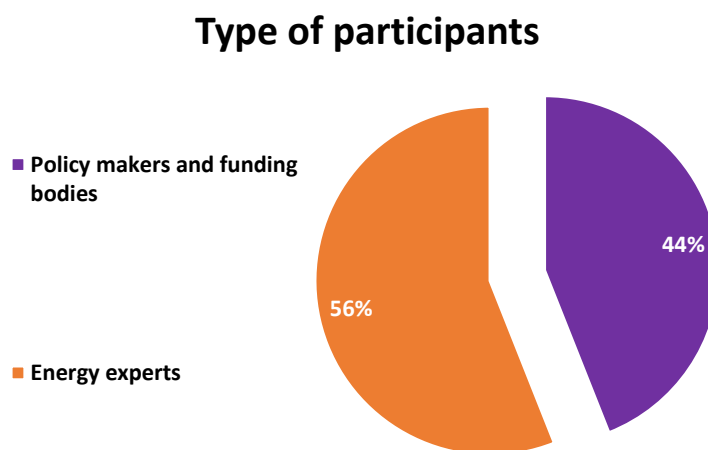


Figure 21 – Second National Observatory in Slovakia: Shares of participants by type of organisation

AGENDA OF THE MEETING

Agenda of the National Observatory		
9:00 - 9:15	Welcome and Introduction of project LEPA4SME	Stanislav Laktiš, SIEA
9:15 - 9:30	Energy consumption in SMEs, energy audits/measures and project outputs	Ján Magyar, SIEA
9:30 - 10:00	Barriers and needs of SMEs in energy efficiency	Ladislav Piršel, alocons, s.r.o.
10:00 - 10:15	Coffee break	
10:15 - 10:45	Case study MTS Humenné Application of the "Energy as a Service" concept as a solution for efficient energy supply in SMEs	Andrea Pancotti, Slovenské elektrárne, energetické služby / energy services
10:45 - 11:15	Green PPA projects as a new progressive element in the electricity market	Róbert Ruňanin, Engie Services, a.s.
11:15 - 11:45	Advanced technologies, local energy sources and prospective aggregators - applications for buildings in SMEs	Daniel Hřčka, Viessmann, s.r.o.
11:45 - 12:15	Possibilities of application of measurement and regulation technologies as a means of energy savings in buildings and SMEs	Juraj Vícen, Juraj Paleček AMICUS SK, spol. s.r.o.
12:15 - 12:45	Discussion/Round table (observatory) on energy efficiency in SMEs - possibilities of legislative regulations	

PROCEEDINGS OF THE MEETING

LEAP4SME project talks

Stanislav Laktiš, SIEA, introduced the main objective of LEAP4SME project, pertinent results and the importance of SMEs in the energy context with subsequent introduction to the workshop.

Ján Magyar, SIEA, presented the main outcomes of LEAP4SME project. Specifically, an overview of deliverables D2.1 (Report and infographic of the SMEs mapping), D.2.2 (Report on existing support measures for energy audits and energy efficiency in SMEs), D.2.3 (Report on energy audits market and main barriers in auditing SMEs). Then he introduced energy audit definition and its importance in SMEs. While data on the representation, structure and importance of SMEs is abundant, information on how much energy specifically SMEs consume is not usually tracked at the national level. Ján Magyar, explained the circumstances: "Until now, it has been mainly large enterprises that have been under scrutiny, or at some point in time, enterprises with high energy consumption, which were required by European regulations and national legislation to have energy audits carried out and to report information from the audits on their consumption and recommended measures to national information systems on a regular basis, so that consumption reductions could be evaluated, savings potential estimated and, if necessary, effective support could be set up accordingly. Small and medium-sized enterprises are obliged to send audit data to the information system for energy projects receiving European financial support. In Slovakia, we estimate the potential for energy savings in SMEs at 15 to 18 %, based on an analysis of data from energy audits in SMEs, which are recorded in the energy efficiency information system. He stressed that the importance of the audits is increasing in times of rising energy prices, as they provide businesses with information on energy saving opportunities and the economic parameters of the measures needed to achieve them. He mentioned briefly also analysis of barriers and solutions provided by project and explained content and importance of energy audit guidelines for SMEs, other publications and events with project inputs, especially conference "Energy audit and services" used as refresher training of energy auditors held in November 2022 in Banská Bystrica.

The presentation of **Ladislav Piršel, alocons**, was focused more in details on barriers of SMEs in energy efficiency implementation. The lack of comprehensive data on energy consumption is a serious barrier among SMEs, especially for medium-sized enterprises. This is evident from the analysis Barriers and Needs of SMEs in Energy Efficiency prepared by the project partner agencies. Ladislav Piršel informed about the methodology and results of the international survey at the event. For all types of SMEs, economic reasons, i.e. lack of investment and measures beyond the financial capacity of the enterprise, are important barriers. For medium-sized enterprises, the long payback period of the measures is also a significant constraint, with a timeframe of more than 5 years being out of their interest. Further findings are published in the analysis on energy efficiency measures in industry and services published by the European Executive Agency for Climate, Infrastructure and Environment (CINEA) in 2021.

Invited talks

The event also included presentations by **Andrea Pancotti, Slovenské elektrárne, energetické služby**, with focus on example of local energy source using RES based on detailed energy audit of SME operation supplied as energy service. **Robert Ruňanin, Engie** in his presentation provided existing approaches to PPA as potential prospective solution for electricity market how to use surplus of electricity as long-term opportunity of SMEs. **Daniel Hrčka, Viessmann** presented practical solutions for SMEs in the use of RES in the form of integrated PV plant at the building and nearby based on energy audit and experience from its operation that will help SMEs to reduce the cost of electricity and at the same time bring co-benefits such as improved working environment, reduced carbon footprint and energy independence. Presented also their concept using the idea of energy aggregators which could be relevant for SMEs. **Juraj Paleček, AMICUS SK** presented applications of monitoring and control incl. building management systems in buildings in providing the data for data analysis as a background for energy auditing and controlling of energy consumption and indoor environment quality as a tool for energy savings applicable for buildings and SMEs.

Observatory session

The observatory session was held as open discussion among the participants. They had also opportunity to provide feedback on the project and the state of energy efficiency in SMEs in



Slovakia. In the final discussion, participants of the LEAP4SME training workshop also outlined recommendations for the project to address in the future. Several agreed that the interest in audits would increase if it were included as an eligible cost in support schemes. The promotion and implementation of systematic and comprehensive solutions in enterprises should also be an important topic especially when it would be implemented in transparent and robust regulatory framework (especially secondary legislation) as different market based concepts, where the ideas and inspirations for state authorities could be taken from practical experience in SMEs also in other countries and could be also used in creation of energy market rules in network industries in general. They stressed that special attention should be paid to model energy solutions for SMEs to give a clear idea of what an energy audit and the implementation of measures entails and how to tackle the SMEs barriers for energy auditing. The energy audit handbook prepared by LEAP4SME project teams again met with great interest, which should also provide a basic framework and inspiration in this respect. Further meetings should also discuss ways to improve the quality of the work in the implemented measures, for example by inspections by the state authority and how to improve the professionalism of energy auditors.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.
- It is desirable to transfer the existing national strategies into reality in such a way that it is possible to plan human (auditors, designers, implementers) as well as other capacities (data information centres for the energy market, monitoring of consumption and savings) and to predict the development/setting of the market environment.
- The right mix of (proven) market models and measures should be applied, emphasis must also be placed on secondary legislation, but technical means must not be forgotten (building/dimensioning of transmission and distribution networks)
- The EE in SMEs mechanisms should be based on sectoral approaches (with a focus on manufacturing) more than on general programmes.

- The EAs can be considered a first step to increase the awareness of energy efficiency. Awareness of EAs and subsequently of possible market models in the area of production, consumption and energy savings must continue to be raised.
- Systems in SMEs are beginning to be interconnected and therefore complex; digitization and systematic deployment of measurement and control technology is essential, which must also be considered in legislative regulations. Monitoring (or measurements) must be the first part of an energy management plan of every SME.
- It is essential to have available data on the progress of energy consumption in SMEs (e.g., in buildings and production processes) in order to be able to analyse energy consumption, manage it and achieve energy savings.
- It is necessary to raise the awareness of energy auditors and SMEs about the analysis of energy consumption from data obtained by measuring and control technology, as well as the combination of technical and economic analyses also within the framework of the education of energy auditors.
- Simplification of procedures is crucial to the effective engagement of SMEs.

2.9.3. National Observatory, 22nd May 2023

The 3rd National Observatory meeting was held on 22nd May 2023 from 9:00 to 12:45 (CET) in Premises of Slovak Innovation and Energy Agency, Bratislava, and online.

The workshop covered two different types of activities: training and observatory. The training session included the presentation of LEAP4SME project, overview/analysis of barriers and needs of SMEs and main results/outcomes from the project (SIEA), and the insight to potential solutions based on energy audits in SMEs for situations often indicated by SMEs.

SIEA organised third of series of workshops within project LEAP4SME focused on energy efficiency in SMEs. Workshop took place on 22nd of May 2023.

The aim is to inform associations of SMEs together with SMEs themselves, organizations dealing with energy efficiency in SMEs and representatives of the state administration about

the benefits of energy audits and the further implementation of recommended measures to save energy and increase energy efficiency in enterprises.

The observatory part was focused on discussion on official policies for energy efficiency and energy audits in SMEs from the viewpoint and needs of SMEs as stakeholders and potential solutions for SMEs.

The workshop was attended by 88 people in hybrid mode, with a strong prevalence of live participation. Figure 22 shows the shares of participants by type of organisation. From the sectoral point of view (depending on the assignment/distribution according to the main activities performed), participants represented a wide range of activities in SMEs, especially production and services, energy, consultancy services, policy makers and financing bodies; business associations, IT, automotive, healthcare, NGOs and R&D were represented to a lesser extent.

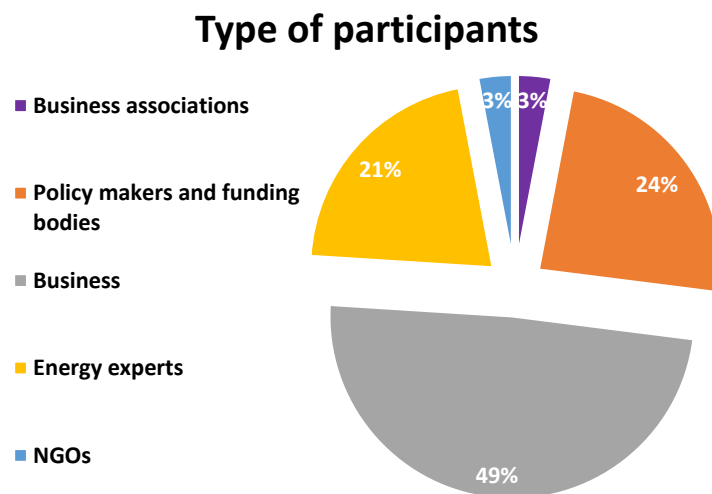


Figure 22 – Third National Observatory in Slovakia: Shares of participants by type of organisation

AGENDA OF THE WORKSHOP

Agenda of the National Observatory		
9:00 - 9:15	Welcome and Introduction of project LEPA4SME	Stanislav Laktiš, SIEA
9:15 - 9:30	Energy consumption in SMEs, energy audits/measures and project outputs	Ján Magyar, SIEA
9:30 - 10:00	Barriers and needs of SMEs in energy efficiency	Ladislav Piršel, alocons, s.r.o.
10:00 - 10:20	Energy audits and their prospective changes in the revised version of the Energy Efficiency Directive (EED)	Miroslav Mariaš, MH SR / Ministry of Economy of the SR
10:20 - 10:30	Coffee break	
10:30 - 11:00	Case study MTS Humenné Application of the "Energy as a Service" concept as a solution for efficient energy supply in SMEs	Andrea Pancotti, Slovenské elektrárne, energetické služby / energy services
11:00 - 11:30	Possibilities of application of measurement and regulation technologies as a means of energy savings in buildings and SMEs	Juraj Vícen, Juraj Paleček AMICUS SK, spol. s.r.o.
11:30 - 11:50	Information system on energy efficiency and module for energy audits as an help for energy auditors	Peter Štibraný, SIEA
11:50 - 12:15	"Green for enterprises", options being prepared for financing of energy audits and their benefits for SMEs	Michal Ilovič, Ivana Zajíčková, SIEA
12:15 - 12:45	Discussion/Round table (observatory) on energy efficiency in SMEs – viewpoint and needs of praxis	

PROCEEDINGS OF THE MEETING

LEAP4SME project talks

Stanislav Laktiš, SIEA, introduced the main objective of LEAP4SME project, pertinent results and the importance of SMEs in the energy context with subsequent introduction to the workshop.

Ján Magyar, SIEA, presented the main outcomes of LEAP4SME project. Specifically, an overview of deliverables D2.1 (Report and infographic of the SMEs mapping), D.2.2 (Report on existing support measures for energy audits and energy efficiency in SMEs), D.2.3 (Report on energy audits market and main barriers in auditing SMEs). Then he introduced energy audit definition and its importance in SMEs. While data on the representation, structure and importance of SMEs is abundant, information on how much energy specifically SMEs consume is not usually tracked at the national level. In the context of monitoring and reporting of energy efficiency he explained the approach/methodology for analysis of EE potential and energy consumption prepared by the LEAP4SME project partners. Ján Magyar, explained the circumstances: "Until now, it has been mainly large enterprises that have been under scrutiny, or at some point in time, enterprises with high energy consumption, which were required by European regulations and national legislation to have energy audits carried out and to report information from the audits on their consumption and recommended measures to national information systems on a regular basis, so that consumption reductions could be evaluated, savings potential estimated and, if necessary, effective support could be set up accordingly. Small and medium-sized enterprises are obliged to send audit data to the information system for energy projects receiving European financial support. In Slovakia, we estimate the potential for energy savings in SMEs at 15 to 18 %, based on an analysis of data from energy audits in SMEs, which are recorded in the energy efficiency information system. He stressed that the importance of the audits is increasing in times of rising energy prices, as they provide businesses with information on energy saving opportunities and the economic parameters of the measures needed to achieve them. He mentioned briefly also analysis of barriers and solutions provided by project and explained content and importance of energy audit guidelines for SMEs, other publications and events with project inputs, especially conference "Energy audit and services" used as refresher training of energy auditors held in November 2022 in Banská Bystrica.

The presentation of **Ladislav Piršel, alocons**, was focused more to details of barriers of SMEs in energy efficiency implementation. The lack of comprehensive data on energy consumption and capacities are serious barriers among SMEs, especially for medium-sized enterprises. This is evident from the analysis Barriers and Needs of SMEs in Energy Efficiency prepared by the project partner agencies. Ladislav Piršel informed about the methodology and results of the international survey at the event. For all types of SMEs, economic reasons, i.e. lack of investment and measures beyond the financial capacity of the enterprise, are important barriers. For medium-sized enterprises, the long payback period of the measures is also a significant constraint, with a timeframe of more than 5 years being out of their interest. Further findings are published in the analysis on energy efficiency measures in industry and services published by the European Executive Agency for Climate, Infrastructure and Environment (CINEA) in 2021.

Miroslav Mariaš, Ministry of Economy in his presentation stated the legal requirements resulting from existing European and national legislation, informed the participants about the new European context of initiatives (e.g. Fit-4-55) and informed about the expected changes compared to the existing situation in the field of energy audits resulting from the process of recast of the directive EED with possible implications for SMEs.

Invited talks

The event also included presentations by **Andrea Pancotti, Slovenské elektrárne, energetické služby**, with focus on example of local energy source using RES, based on detailed energy audit of SME operation, supplied as energy service. **Juraj Paleček, AMICUS SK** presented applications of monitoring and control incl. building management systems in buildings in providing the data for data analysis as a background for energy auditing and controlling of energy consumption and indoor environment quality as a tool for energy savings applicable for buildings and SMEs. **Peter Štibraný** from **SIEA** presented new ISEE module for energy audits as a part of the national monitoring systems for energy efficiency, its concept and functionalities, what are the benefits and simplifications for energy auditors and the clients of the audit, brief explained processes of registration, data inputs and interface masks, user friendly properties and the outputs from the system for auditors and organizations with focus on SMEs. **Michal Ilovič, SIEA** provided in his presentation the main information about

prepared support schemes for the energy efficiency and use of RES in enterprises based on active consumers of electricity, self-consumers of energy from RES and communities producing energy from RES, including the provision of energy audits for SMEs, what would be the role of the audit, conditions and process how the costs for energy audits will be compensated to SMEs.

Observatory session

The observatory session was held as open discussion among the participants. They had also opportunity to provide feedback on the project and the state of energy efficiency in SMEs in Slovakia. In the final discussion, participants of the LEAP4SME training workshop also outlined recommendations for the project to address in the future. Several agreed that the interest in audits would increase if it were included as an eligible cost in support schemes, therefore the information on potential provision of energy audits as eligible cost in support scheme for SMEs was received positively. Other discussion was focused on more detailed conditions/differences of energy audits for energy efficiency in SMEs and RES energy production in SMEs and knowledge of energy auditors as a combination not only technical but also economic skills. Special attention should be paid to model energy solutions for SMEs to give a clear idea of what an energy audit and the implementation of measures entails and how to tackle the SMEs barriers for energy auditing. The energy audit handbook prepared by LEAP4SME project team was met with great interest and could help SMEs to use energy audits more frequently, more qualified and more targeted as a tool to support them.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

- The EE support mechanisms in SMEs should be based on sectoral approaches (because of diversity of focus/activities of SMEs) more than on general programmes. Interest in audits would increase if they were included as an eligible cost in support schemes.
- Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.
- Simplification of procedures is crucial to the effective engagement of SMEs.

- The EAs can be considered a first step to increase the awareness of energy efficiency. Awareness of EAs in the area of production, consumption and energy savings must continue to be raised.
- There must be the possibility of drawing support for individual energy-saving measures even gradually/multiple times up to a defined amount, while the support should be applied throughout the state and should also allow for a combination of funding sources.
- It is essential to have available data on the progress of energy consumption in SMEs (e.g., in buildings and production processes) in order to be able to analyse energy consumption, manage it and achieve energy savings. Energy consumption is rarely monitored by SMEs and hence additional support measures, specifically targeted to monitoring, could be useful to increase the adoption of monitoring system and then the knowledge of firm's own consumption profile.
- Quality EA audits should have certain standards and criteria, especially when subsidies and financial incentives are provided; it could be increased by inspections by the state authority.
- It is necessary to raise the awareness of energy auditors and SMEs about the statistical analysis of energy consumption from data obtained by measuring and control technology.
- Combination of technical and economic disciplines and analyses also within the framework of the education of energy auditors is necessary.

2.10. United Kingdom

EST adopted two approaches in UK national observatories: bilateral interviews with main stakeholders and meetings. Two meetings were organised and a total of eight interviews.

2.10.1. Bilateral Interview, 1st September 2022

The first interview was held online on 1st September 2022, and it involved EST and academic experts.

AGENDA OF THE INTERVIEW

Structure of the interview		
Duration	Purpose	Speaker
5 min	Introduction to LEAP4SME project	Adrianna Threpsiadi, EST
10 min	Description of EST's activity within the project	David Weatherall, EST
15 min	Discussion on barriers in unlocking energy saving measures	All

PROCEEDINGS OF THE INTERVIEW

The discussion led to some interesting and different perspectives from academics. Although the expert sees the value of identifying the barriers and suggesting ways to overcome these barriers and sees it as a useful approach in policy making, he also questions the assumption that removing barriers will result in SMEs making different choices and investing more in energy efficiency.

Their view is that this approach is a bit too simplistic for this challenge as it doesn't acknowledge that the decision-making process for an SME is complex, and that SMEs are all very different. Decision making in SMEs is less formal than for large enterprises, it is more strongly influenced by personal professional and organisational values, and is influenced to a greater degree by local contexts. This is an interesting point for LEAP4SME where the decision-making process of SMEs and the behavioural element are also considered and investigated.

Another interesting learning from discussion with the expert was on the knowledge gap of energy professionals. Energy auditors and professionals have a set of technical skills, however, have limited knowledge about how an SME uses energy, for example some activities may not be energy efficient, but they have a business purpose that an energy auditor may not understand. These practices support the businesses success. Therefore, a recommendation from an auditor who does not understand these business practices may lead to unintended consequences that negatively impact the business. This then leads to the businesses rejecting these recommendations. In future, support policies/programmes would be useful to understand how this could be improved.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the interview can be summarized as follows:

- Study the non-economic factors acting as barriers in SMEs.
- Fill the knowledge gap of energy professionals.

LINKS TO EVENT INFORMATION

To ensure that meeting was an open and free platform for discussions and deliberations, the session was not recorded.

2.10.2. National Observatory, 30th January 2023

This event covered a training session along with an observatory discussion at the end of the session. The training session included presentations on SME energy audit standardisation in the UK and saw presentation on the energy audit voucher scheme managed by Sustainable Energy Authority Ireland (SEAI). During the training, EST also shared a presentation on the preliminary results of behavioural research study conducted to understand what behavioural changes are required to stimulate uptake of energy audits and energy efficiency measures among SMEs.

The workshop was held online on 30th January 2023. The meeting was attended by 25 participants and the shares of participants by type of organisation are shown in Figure 23.



Type of participants

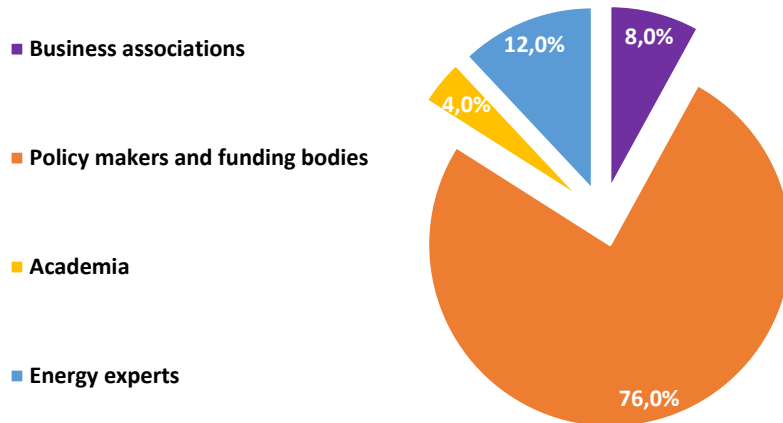


Figure 23 – First National Observatory in the UK: Shares of participants by type of organisation

AGENDA OF THE MEETING

Training		
10:00-10:05	Welcome and Introduction	Liya Thomas, EST
10:05-10:15	The role and types of energy audit	Jack Wilkinson-Dix, EST
10:15-10:30	Quality and process standards of energy audits	David Weatherall, EST
10:30-10:40	Q&A	
10:40: 11:00	How to incentivise audits	Dearbhla Stapleton, The Sustainable Energy Authority of Ireland
11:00-11:10	Q&A	
11:20-11:40	Beyond audits: A behavioural change perspective	Emma Bill, EST
11.40-11.50	Q&A	

Observatory discussion	
11.50-12.25	<p>Focus:</p> <p>What (if any) additional standards are needed for SME audits?</p> <p>How can we maximise the uptake of effective audits?</p> <p>Should a more standardised approach (e.g., based on ISO50002/EN16247) to energy audits be encouraged in the SME sector? How?</p> <p>Where regional SME support programmes (ERDF & Shared Prosperity Fund) provide audits– should there be more shared learning and best practice?</p> <p>Do free or heavily subsidised energy audits work in driving action? (At national at regional/local level) Are they a good idea?</p> <p>What is the value of Level 1,2 and 3 audits? Do all SMEs need audits at all levels? Is there more potential because of the energy crisis?</p> <p>How could government and regional policy makers support development of a market for SME energy audits?</p> <p>How does the potential/market for SME audits differ between business sectors?</p>
12:25-12:30	Closing

PROCEEDINGS OF THE MEETING

Training Session

The session began with a presentation by policy officer Jack Wilkinson-Dix from EST, on the overview of energy audits in the UK and the levels of audits listed under ISO 50002. This was followed by a presentation from David Weatherall on energy standards and regulations in the UK. The presentation went into the details about the Energy Saving Opportunities scheme, the non-domestic energy performance certificate, and the display energy certificate. The presentation concluded with the state of play of SME energy audits in the UK. The presentation by Dearbhla Stapleton from Sustainable Energy Authority of Ireland covered the learning from SEAI's support scheme for energy audits. Emma Bill from EST shared the results from the behavioural research on non-economic factors influencing the uptake of recommended measures under energy audits. The presentation gave a detailed overview of the study methodology and the recommendations for energy efficiency and audits that came out of the research.

Observatory session



The observatory session was attended by 7 external participants, predominantly from the government and local councils.

During the discussion, participants addressed the importance of coming with a common language. Terms like audits and assessments are used interchangeable and the word 'audit' often doesn't have a positive association for businesses. So, the emphasis should be on promoting 'good energy management' and audits are just one part of that process. A standardised approach to audits and the use of common terms to describe energy audits and assessments would be useful from a policy implementation point of view as they allow for comparisons between programmes that are being delivered across the country, but also allow for international comparisons.

The discussion focused on several main points:

- The need for a national scheme: a nationally delivered scheme would be the best approach. Currently, there are schemes being delivered at the local council level which means that the access to these schemes or initiatives is higher in certain geographical locations than the others. An initiative/scheme delivered at the national level will avoid the risk of inequality to access based on geographical locations.
- Standardisation of energy audits: there is value in developing a common standard for SME energy audits. Instead of developing a new standard, it would be preferable to use an existing standard, which is internationally recognised. Moreover, it is essential to make energy audits more accessible to SMEs, that means the standards used should be easy enough for the SMEs to complete themselves. This would make them more accessible and allow more SMEs to complete audits. Another point of consideration should be that the energy audit market should be at the central government level.
- Trusting the auditor: there needs to be a centralised list of verified auditors for SMEs to hire, like the one available in [ESOS](#). From an SME perspective whether an audit follows a certain recognised standard could be less important. To an SME the more important thing is that they trust the auditor. Trust with the auditor might be because the auditor is required to meet a certain standard, the auditor's qualifications, but also interpersonal factors. It is important that SMEs trust the impartiality of the auditor,

because sometimes there is suspicion that auditors, or the government, are trying to push certain technologies.

- Audit process: it is important that auditors understand the activities within the business and make recommendations that are workable for that SME. Audits should include information about the SME context, so that it is possible to see why certain recommendations were made. Without this context it is not possible to compare audits and see why certain measures were recommended in some cases but not others. Often the misconception among SMEs is that audits only pertain to structural elements of a building which they do not have control over and therefore think that it is a waste of time. An awareness campaign on how energy audits can help reduce energy use would be helpful for small businesses to uptake energy audits. Moreover, an advice service would be crucial to support SMEs in making decisions about how to improve their energy performance.
- Incentivising audits: to incentivise audits, it is a good idea to offer a subsidy, particularly for time and cash poor SMEs. But it is more important that there is a follow up after the audit to assist SMEs with taking the next step and implementing measures. Just offering money towards the cost of an audit is not enough.
- Following up post energy audit support: in Scotland, businesses which meet certain criteria are required to have an energy action plan. It is a requirement to sell or rent commercial space above a certain size. However even though many businesses have these plans, very few measures have been implemented. So this strengthens the argument that it is important to follow up with businesses to make them take the next steps, otherwise they are unlikely to take action without being supported.

CONCLUSIONS AND RECOMMENDATIONS

- Need to develop a standardised approach to energy audits.
- Require more awareness generation programmes for SMEs to understand the benefit of energy audits.
- Incentivising audits is a crucial approach to encourage SMEs to conduct audits.
- Publishing a verified list of energy auditors for SMEs to access.

LINKS TO EVENT INFORMATION

[The role of energy audits in unlocking energy saving measures | LEAP4SME](#)



2.10.3. Bilateral Interview, February - March 2023

Seven interviews have been held online in the period February - March 2023 involving in total nine experts. The distribution of 9 interviewees by their type of organization in the figure below:

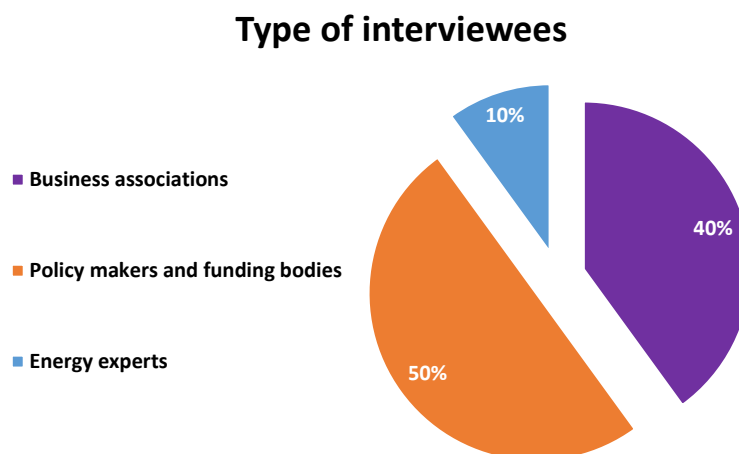


Figure 24: Bilateral interview February-March 2023 in UK: shares of participants by type of organisation

As part of the LEAP4SME project, bilateral interviews were conducted with 9 stakeholders from central and devolved UK governments, trade associations, local councils, and energy expert organisations. The discussion focussed on the challenges faced by SMEs when it came to understanding and monitoring their energy use, the benefits of an energy audit approach and what effective solutions could be implemented to drive the installation of energy efficiency measures among SMEs.

The overarching themes that came out during the interviews are highlighted here to guide further discussions on a national level SME energy audit programme:

- Almost all respondents described SMEs having access to expert and impartial advice as a crucial enabling factor. Overall, low awareness of both the need to improve energy efficiency and the support available were seen as challenges.
- The existing form of finance schemes offered through competition-based grant funding is not an easily accessible source of funds for SMEs. It demands in-house time and resources which SMEs often cannot afford. Moreover, the extensive eligibility requirements for these grants often prevent many SMEs from applying for these funds.

Overall, the funding landscape, particularly in England, is relatively sparse with limited private or public financing options, aside from the funding available through European Regional Development Fund local authority schemes.

- SMEs struggle to access information about energy efficiency or the audit process and to access suitably qualified auditors. SMEs lack in-house resources to understand the kind of changes they need to be energy efficient.
- Some interviewees felt that mandating SME energy audits through a standardised, cost-effective framework would be beneficial. Currently, SMEs must complete multiple applications and follow multiple reporting frameworks to access funds, some respondents felt that a more standardised approach for accessing information and financial support would be beneficial.
- Some interviewees, particularly those focused at a local or regional level, reported significant supply chain constraints and local skills shortages. It was felt that these challenges presented a significant barrier in the near term to widespread adoption of energy audits and installation of recommended measures.

PROCEEDINGS OF THE INTERVIEWS

Interview 1 - Government financing body

The interview was held on 9th February 2023, and it involved the Development Bank of Wales. The key themes discussed were as follows:

- Very recently launched an SME loan scheme with elements of audits and advice included. Doesn't include a grant element as is the case in Scotland but would like for that to be included as the scheme evolves to incentivise specific technologies and bring in more applicants.
- Scheme designed to tackle cost of living and decarbonisation. Designed to address the lack of information available to businesses and support them with financing. Say that this first iteration is more focused on what will provide a direct commercial benefit to the business. This tends to mean energy efficiency and energy reduction plus solar PV. Say thought that intention is to engage with businesses and get them on the

journey to net zero where some of the later choices might have far longer payback periods.

- Say that they have a route to part and fully funded consultancy support which is being managed by Business Wales and Welsh Government teams. Will use Business Wales Resource Efficiency Advisors. Recognise this may not be a perfect approach because these teams are only mandated to do a certain amount of work with businesses like this and they will not hand hold through the entire process. Using Business Wales advisors will be fully funded but less in depth.
- Another route will see the Development Bank 50/50 match fund with the business to access an independent consultant who will provide a deeper analysis of what is needed for their business more akin to a full audit and route map. Interested to see what the take up and feedback is for these different approaches.
- Do have some concerns that neither option offers a project management or hand holding approach or directs businesses to reputable suppliers/installers – see this as a possible area to build on as time goes on.
- Will be interesting to see what the take up of each approach is like and what the implementation rate is like.
- Very keen to attract smaller SMEs who might otherwise struggle to engage. Want the scheme to be open to everyone. They see these businesses as being where the volume comes from. These businesses are harder to keep engaged and often need the most support.
- Were open to the idea of applicants receiving funding for low carbon investments that did not contribute to building energy use (e.g., electric rather than petrol power tools etc.) but not for funding fleet decarbonization.
- Very keen on putting the onus on suppliers to support businesses. Would like to get to a stage where smaller businesses undertaking simpler schemes don not require any audit at all, just a business plan which the supplier feeds into, which allows the Dev Bank to make a funding decision.
- Keen on offering Energy Assessment Guides (2-page walkthrough/prompt) which enable a business owner/manager to self-assess their energy use and identify possible opportunities to save energy. Found that SMEs often don not have the time or interest

to show someone external around but appreciate having the control to assess their own operation. Provided a supplier is willing to work with them to produce a set of figures and a plan the Bank is willing to consider this. Their preference would be for fabric first but equally they will not stop a business undertaking a solar-only project. Do have a carbon-cost threshold calculation but they can be quite flexible. Used more as a guide. Interested in wider non-carbon benefits as well.

- Also struggled to review ERDF projects.

Interview 2 – Devolved Government

The interview was held on 23rd February 2023 and it involved the Welsh Government. The key themes discussed were as follows:

- Respondent worked with Foundational Economy team identifying supply chain pinch points and championing the supply chain in Wales.
- Felt that making businesses aware of what support is available is the most significant challenge as well as the need to constantly re-engage.
- Felt that in Wales in particular, the audit process and energy efficiency installations are very reliant on a small pool of specialists. Skills shortages were returned to several times. Work ongoing to improve skills in Wales through Optimised Retrofit Programme and other initiatives. Net Zero Skills Plan due to be published in Spring.
- Felt that making businesses aware of the opportunities meant continuing to work with Business Wales and Sell to Wales (procurement portal). Both being encouraged to work in a more net zero-aligned way and use procurement to support SMEs (e.g., breaking up big contracts and pushing for high standards).
- While discussing new Development Bank of Wales offer, reflected on the fact they will not directly point businesses in the direction of where to purchase technology or services. Did say that some guidance will be offered through Business Wales and their dedicated energy assessors.

Interview 3 – UK Government Department

The interview was held on 22nd February 2023 and it involved the Department for Energy Security and Net Zero (formerly Department for Business, Energy, and Industrial Strategy).

The key themes discussed were as follows:

- Recognise that access to expert and impartial advice is key. Working on ideas for a business-focused advice service. Likely to be an online service based on archetypes.
- Considering the feasibility of audits (possibly subsidised) and grants. Again, likely a digital offering, possible launch in September.
- See the added value of in-person auditing and working on a concept for this as well. Have heard repeatedly that site visits are necessary to achieve good take up and emission reductions.
- Confident there would be interest in a scheme, the more challenging question is who to target? Likely that the audit would be open to anyone but there would be eligibility criteria for financing (likely based on revenue or size).
- Discussed the classic split incentive issue and their concerns about handing public money over to large commercial landlords who may not need it (in some cases).
- Discussed that in parallel another team is looking at the future of ESOS and what role that scheme could play. Wasn't certain of the details but knew that the 4-year ESOS cycle caused some issues.
- Reflected on the fact that BEIS have had big challenges trying to access ERDF project evaluations.
- Felt that being able to collate energy saving and EPC data to inform stock models etc would be valuable and would help make the pitch for scaling up any future scheme but said this hadn't been considered in any depth. Issues with smart metering and sub-metering could prove challenging.
- The purpose of the pilot they're designing is to identify remaining barriers. Felt that the pilot would be focused on SMEs with premises as many sole traders' emissions could be addressed through our policies, particularly those focussed on domestic.

Interview 4 – Trade Association

The interview was held on 7th February 2023, and it involved the Senior Climate Change, Energy and Environment specialist at Make UK. MAKE UK is 125-year-old organisation, representing 22000 manufacturers in the country trying to give the voice back to SMEs. The key themes discussed were as follows:

- Main barriers for SMEs in the manufacturing sector are finance and skills. Until last year, i.e., before UK was hit with the energy crisis, SMEs were concerned about skills, but now it is about the cost of doing business. Suddenly energy has become an important topic, which was not the case before, because the gas prices were low. Some SMEs are more energy intensive than others and for these SMEs, internal improvement is required to be energy efficient which would mean changing their equipment.
- Making finance schemes/initiatives more accessible to SMEs through “tax allowances for investment”: manufacturing industry is heavy on equipment’s which are quite expensive, which will cost around 2 million pounds. This is why SMEs need capital. They are usually quite bespoke and sometimes specific to manufacturing industry. Banks often do not know the manufacturing sector very well and they consider these assets quite high risk, even though the lifetime of these equipment’s is 15-20 years, banks will only lend for 5-7 years. This means that the loan terms are short and not favourable to business. It becomes unaffordable for companies as they can’t get suitable loans. There are no specialised markets. There are, however, efforts through Energy efficiency European Financial Institute groups (EEFIG) looking into de-risking, where lenders are looking to partner with technical companies who would be able to guarantee the supplier. The same goes for green technologies. Solar panels and heat pumps are considered risky by lenders. Moreover, there is no second-hand market for these equipment’s. In addition, banks do not trust Chinese supplies as they doubt the quality of the supplies. Partnering with a technical provider will reassure the business of a supply and will ensure that these assets can be resold, if need be.
- Initiative at the national level that could be adapted to SMEs: Any financial initiative that involves credit or tax credit is great, but it is based on reclaiming it. We know that the govt doesn’t like grants. Cash credits/tax credits is a possible area to research into.

The point is to get some cash up front to allow companies to get started. The other thing is to dis-incentive. Currently, if you are installing solar or any green equipment you get business rates increased, so if on the contrary you got rewarded for investing in green equipment's, green technology, or insulating your building, that would be better.

- Barriers for SMEs to conduct energy audits:
 - Until the prices hiked, improving your energy efficiency was not an attractive strategy. SMEs would rather increase their productivity than work on energy efficiency. But now with the energy crisis and the prices going up, adopting these measures is a big factor for SMEs to conduct energy audits. However, SMEs often do not know how to get energy audits done. They do not know whom to trust. The govt should have a website with a list of trusted auditors. However, just having this list will not be enough, SMEs need to know how to implement it, they need resources in-house. Someone with knowledge of implementing these measures, to understand which machines to change into. It is really holding them by the hands, so energy audit is the first step. SMEs need funds and grants to allow these changes within the company.
 - Finding the finance: SMEs have the perception that lenders will not lend them and often they have recovery scheme loans. They need advice and whole package of measures. For example-the problem with the funding in the UK is that the funds for SMEs are geared towards innovation and development, but nothing commercialised. The other big problem is that most of the funding is based on competition and SMEs have no time to go through the complicated application process. And they start at 1000-2000 pounds and if SMEs have to invest 30% of this amount upfront before gaining the funds, its already quite a large sum.
- Standardising reporting framework: SMEs do not have the time inhouse to deal with all the various aspects of business. Often, SMEs spend hours on applications and reports that are all different from each other but reporting similar things. Having a standardised reporting framework will reduce this burden, but it should be standardised to some degree, without being too complicated.
- Other recommendations: It would be helpful is to make it mandatory to report on energy efficiency. It is a bit extreme, but a strong policy framework should be quite robust.

Interview 5 – Trade Association

The interview was held on 9th February 2023, and it involved the Public Affairs Director at UK Hospitality and the Policy Manager at UK Hospitality. UK Hospitality has 750 members from across hospitality-pubs, hotels, and even suppliers.

The main challenges facing SMEs specialising in the hospitality sector and few recommendations were collected:

- limited pool of capital and unwillingness to invest in technology: Energy audits are not regularly conducted because of the cost associated and scepticisms. There are no existing initiatives that could help improve this. An initiative that offers incentives and grants to SMEs could work. Or initiatives that offer offsetting against small property tax, offsetting against employment tax. There is a lack of trust on payback on the technology.
- Lack of knowledge: lot of the problem is SMEs do not know where to look, so a targeted approach for communication and campaigns. Because SME decarbonisation is such a complex area, there are resourcing challenges. Initiatives like peer network, across economy, across sector will be helpful. Such networks or collaborations can help to breakdown knowledge gaps. SMEs often have specific needs, so having a network to share idea and discuss solutions but caveated with govt initiatives and funding initiatives would be beneficial. With the current lack of knowledge, there is lack of skills to help transition to energy efficiency.
- Short term leases: no security, tenure, you have to pay back in 5 years. Need to find ways to make leases more long term. Still quite a lot of debts from COVID, there is a lack of willingness to loan to hospitality sector. Banks have higher premium.
- Standardising: in 2016, audits became mandatory-you fill in the audits and you get recommended technologies. Some standardisations would be preferable, whether across economy or across sector-SMEs varies so standardising would be very useful.

Interview 6 – Trade Association

The interview was held on 7th March 2023, and it involved the Head of Climate Change and Energy Policy at Food and Drink Federation.

The main challenges facing SMEs specialising in the food and drink federation sector and few recommendations were collected:

- Finance: when we talk about right here right now, we are talking about business survival -amid COVID, Ukraine, high inflation, insolvency going up. People are thinking of short-term survival. Even during normal times, finance and raising that capital is a challenge and that can be for few reasons- for some companies it can be easier if its family owned and if they do not have to face the same investment hurdles as other do.
- The other point is knowledge gap. Understanding what to do next. Even large companies may struggle to get an energy focused manager, energy managers who are focussed on upscaling this.
- Loans are not the best solution at the moment.
- SMEs require more grants. There are some commercial arrangements out there that look at third party arrangements. Service provision is another thing to look at.
- In the current environment, reducing energy cost is the biggest driver for any action in this area.

Interview 7 – Local council energy hub

The interview was held on 20th February 2023, and it involved the Regional Principal Net Zero Projects Officer, Midlands Net Zero Hub, Nottingham City Council. Midlands Net Zero Hub support local authorities with energy or net zero projects. Midlands net zero hub is funded by government, like Business Energy and Industrial Strategy and we are under the administrative authority of Nottingham council. Main challenge is for SME business in general is time and resources-staff time to dedicate on improvement, but also resources in terms of financial, they struggle with prioritising funds. It is difficult to find staff and resources to investigate dedicated processes. To trigger that discussion around energy audits is a barrier in many SME. The major barrier is finding the initial push-it is not just capital fund-it is also in terms of providing

additional resources. In some cases, packages to support upskill or re-skilling internal resources.

Another challenge is to access the support and to understand where the support is. SMEs do not have the time to look for support, they are not aware of the funding available. An easy achievement is to provide One-shop fits all solutions, where businesses can get the support and guidance they need. There has been a model which has been tested called ESCO-in-a-box funded by Department of Business Energy and Industrial Strategy, tested in Oxfordshire. The concept is to deliver the support required by SMEs in one place - like audits, the priority measures, then identify the potential, local or installer - after a feasibility assessment. SMEs would repay the finances back with energy saving and recirculate in future projects as well. Such solutions should be encouraged.

It is more about how we reach out to SMEs. Local Enterprise Partnerships (LEPs) are being scrapped by the govt, especially in the case of west midlands. So, any programme backed up by public authorisation should be encouraged because it builds trust.

Financially, in terms of delivering capital project-SMEs are struggling, they can't provide any investment. They have to return any funds in 3 years' time.

There is a better understanding at the local level about the needs of businesses, we do encourage a sort of local growth and it would be good to set this. The realities of different locations are different. The challenge in the west midlands is very different from the business model and the clients in the southwest, also in terms of the relationship we have with the clients. In the west midlands there are organisations that can provide support for free. To define the terms and conditions nationally is difficult, especially at the councils' level or regional level contextualities are different. However, if the funding can be mandated at the local level, that would be more beneficial.

Interview 8 –Energy Expert Organisation, Consultancy

The interview was held on 21st February 2023 and it involved the Associate Director, Climate Action Planning at Carbon Trust. The following topics were discussed:

- Financial challenges with SME decarbonisation: When we ran a programme providing grants for energy efficiency improvements within small businesses, we found it difficult



to give out the money. It was a 5000-10,000 pounds grant, hugely popular but some of the criteria and requirements to allocate the funding was difficult for SMEs to meet. SMEs love grants but it is not sustainable. Its challenging to give out all the money, qualifying each applicant. Are these solar panels going to generate everything they are going to generate, getting this information from SMEs was difficult because they didn't have the resources to contribute time and resources to gather this information. They did not have the capacity to deal with challenging administrative difficulties of a grant.

- With SMEs, the challenge always relates back to resources. If there is a guidance or training towards building awareness-fuel reduction, cost reduction – that is where the messaging needs to come from - it is not just about energy efficiency, it goes hand in hand with business cost. If the communication has that kind of lens to it, it has higher chances of convincing SMEs. So that it doesn't come across as an additional burden but can fit in within business operation.
- Something like ESOS can be expanded to SMEs. It is not cheap to engage consultants to engage auditors, compliance mechanism, they see it as an additional cost and do not see the positive side. But the requirements need to be SME sensitive, they do not have 1000 pounds to spend on energy audits.
- When talking about decarbonising an SMEs, Energy Efficiency is only one aspect. There are other angles to it, like transitioning to green tariffs, removing fossil fuel use (like gas consumption in SMEs for heating) and transitioning to electric vehicles.
- Other recommendations- Energy audits need to be reasonably standardised so that energy auditors can conduct it in a uniform way or if we could, in a slightly more cost-effective manner. To conduct an energy audit without costing much. Potentially offer some initial financial support for the first wave of energy audits, but ultimately for it to sustain, it must be cost effective. The pricing needs to be scalable based on the SMEs, the costing needs to be scalable based on the complexity of businesses. Standardizing the approach to conducting the audits, to make sure that it can be conducted in a standard cost-effective way.

LINKS TO EVENT INFORMATION

To ensure that meeting was an open and free platform for discussions and deliberations, the session was not recorded.



2.10.4. National Observatory, 13th March 2023

This event covered a training session along with an observatory discussion at the end of the session. The aim of the training session was to draw attention to the gap in financial support in the UK for SME decarbonisation. We started with a presentation on our research for the Climate Change Committee on policy gaps and recommendations for SME decarbonisation in the UK based on interviews conducted with key stakeholders. This was complemented with a presentation on SME green financing in the UK. The session also drew attention to private financing solutions tested in certain regions called ESCO in-a-box. After highlighting the patchiness of financial support in the UK, Local Government Association gave an overview of UK Shared Prosperity Fund, a policy initiative which was introduced as a replacement for European Regional Development Fund (ERDF). This presentation highlighted the limited potential of UKSPF to support SME decarbonisation. To share experiences about the implementation of UKSPF in practice, we had presentations from East Lancashire Chamber of Commerce that spoke about the difficulties in executing the initiatives in their council. They also highlighted the other programmes and initiatives offered at the council level to support SMEs to drive energy efficiency. The workshop was held online on 13th March 2023. The event was attended by 25 external participants and their distribution by type of participant is shown in Figure 25.

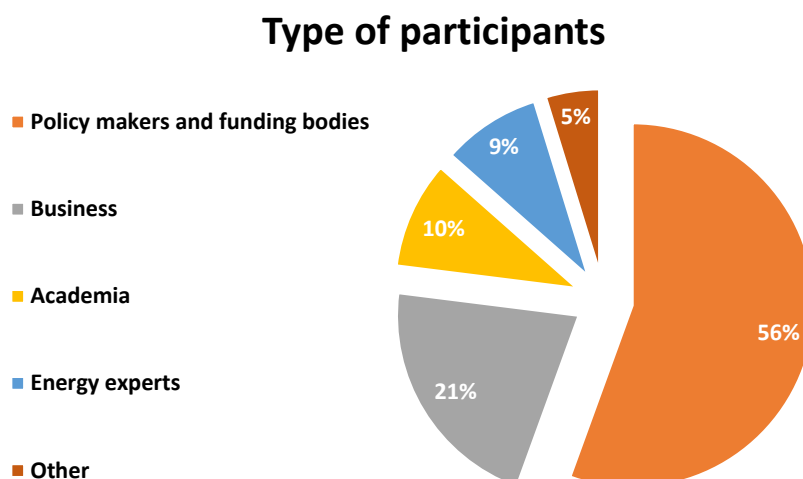


Figure 25 – Second National Observatory in the UK: Shares of participants by type of organisation

AGENDA OF THE MEETING

Training and National Observatory, 13th March 2023		
2:30 - 2:35pm	Welcome and Introduction	Liya Thomas, Energy Saving Trust
2:35 - 2:45 pm	Key findings from EST's report to the Climate Change Committee	Adrianna Threpsiadi, Energy Saving Trust
2:45 - 3:05 pm	Financing SMEs 'Greening' in the UK	Dr Robyn Owen, Associate Professor at Middlesex University London
3:05 - 3:15 pm	Q&A	
3:15 - 3:35 pm	ESCO In-a-box – A local value creating solution for SMEs	Alex Rathmell, Managing director EP consultancy
3:35 - 3:45 pm	Q&A	
3:45 - 3:55 pm	BREAK	
3:55 - 4:10 pm	Overview of UK Shared Prosperity Fund	Paul Green, Policy Advisor at Local Government Association
4:10 - 4:25 pm	SME decarbonisation activities in the East Lancashire Chamber of Commerce and the experience with UKSPF	Miranda Barker, Chief Executive and Stephen Sykes, Director of Sustainability
4:25 - 4:35 pm	Q&A	
4:35 - 4:55 pm	National observatory - discussion on 'How should the government maximize effective delivery to drive action on SME decarbonisation? How can we align private financing models to think about a national policy framework?'	
4:55 - 5.00 pm	Close	

PROCEEDINGS OF THE MEETING

Training Session

The session began with an overview of the findings of Energy Saving Trust's research for Climate Change Committee on 'how policy can better support SMEs in the pathway to net zero'. The presentation highlighted the policy gaps that exist which includes lack of information, advice, finance, and skilled practitioners. The presentation by Dr Robyn Owen focused on looking beyond the energy efficiency and highlighted the need for a holistic

approach to SME greening. This presentation highlighted the need for a wider nature positive approach which address net zero, but also energy, food, water, and health. This was followed by the presentation from Alex Rathmell from EP connect on ESCO in-a-box solution. Alex spoke about private financing solutions that could cater to the specific needs of each SMEs. The presentation from Local Government Association on UK Shared Prosperity Fund gave an overview of the new scheme that replaces ERDF. Paul highlighted the financial challenge faced by local council with a funding scheme (UKSPF) that is available only for 2.5 year which is not enough to meet the long-term ambition. The presentation from East Lancashire highlighted the various initiatives undertaken by the local authorities to support SMEs.

Observatory session

The observatory session was conducted in the form of a panel discussion with 5 panellists from the academia, local council, local authority, and consultancy. The discussion focussed on answering the questions 'What can the newly established Department for Energy Security and Net Zero (DESNZ) do to maximise action from SMEs on decarbonisation'. 'How should the government maximize effective delivery to drive action on SME decarbonisation?' 'How can we align private financing models to think about a national policy framework?'

One of the problems acting as a barrier for improved action on SME decarbonisation is the lack of continuity across different government departments and agencies. For instance, Department for Environment, Food & Rural Affairs (DEFRA) does not work closely with Department for Business, Energy & Industrial Strategy (BEIS). What we need is more coordination between department and agencies, so that we are providing some continuity of policy and this needs to be sorted centrally. Local authorities are working in isolation. There needs to be better strategy from the top down. For instance, after receiving the funding to set up ESCO in-a-box solution from the BEIS, there was a disconnect. There was no further support to roll it out. That was a gap.

The competitive nature of funding limits its access for many SMEs. There is a lot of work around putting the application in and if you do not win, you lose. We need a shift towards technology viability thresholds. We must have funding focussed on innovations, innovations that create the jobs locally.



Government should recognise that there are challenges around the horrendous cuts to public services and local authority funding. Challenges related to Brexit. Loss of access to those funds coupled with declaration around NetZero, but no clarity around what local authorities' role is in delivering this NetZero. Local authorities have been allowed to declare their own best version of NetZero but have been given no statutory power that goes with that or any budget to support the plan.

It is always national government having to take the hard decision, the best starting point would be defining the powers of the local authorities and their role in net zero and resourcing the budget to meet those and the statutory powers to be there and recognise that Brexit is actual problem to removing the fundings. A good start would be to fund more resources for regional net zero hubs. Scale up the net zero hubs to navigate what funding there is, launch an interest free loan guarantee/credit guarantee-help businesses to do sensible thing to create value to net zero. Quick wins like that would be helpful.

In terms of the financing, it is a deep concern, previously we had green investment bank, and now we have green finance institute and none of these have anything to do with SMEs or a provide a roadmap for SME greening. Small business does not come into this framework. We need a proper overarching authority to focus on small business green financing, from a central government perspective, which is beyond the range of any local authority.

CONCLUSIONS AND RECOMMENDATIONS

The main recommendations that arise from the workshop can be summarized as follows:

1. Local authorities need to be given more authority and budget to finance the NetZero plan.
2. There is a lack of a roadmap to identify SMEs role in the NetZero plan.
3. Need better synergy between different government departments.
4. The competitive nature of grants/funds is a challenge for SMEs. They lack the time and resources to invest in the application process.

LINKS TO EVENT INFORMATION

Link to the event recording and presentations: <https://leap4sme.eu/event/unlocking-net-zero-financing-for-smes-through-local-business-support-programmes/>



3. International Events

3.1. Summary of the international events

The project partners organised five international events as shown in Table 3. The two International Observatories were held respectively in Rome, in September 2022, and Brussels in July 2023. In these meetings policymakers, national energy agencies, business associations and other relevant stakeholders at EU level have been brought together to facilitate discussion and sharing of best practices for implementing more effective energy efficiency policies for SMEs. The meetings have been an opportunity to deepen the status of national and European policies for SMEs, their barriers and enabling factors to unlock the energy efficiency potential of enterprises; to seek links between SME and large enterprise policies; and to discuss topics related to energy management systems and energy audit policies and techniques for SMEs. Information was also gathered from EU policy makers on the latest developments in the EED recast and to better understand the role of industry, business and SMEs in the updated directive.

In addition, LEAP4SME partners actively participated in other international events (such as Behave conference and EU Sustainable Energy Week), organising dedicated sessions and workshops.

Table 3 – List of International events organized by LEAP4SME partners and description of their main features

LEAP4SME International Observatories		
International observatory meeting on energy efficiency policies for enterprises and SMEs	Rome, Italy	15 th -16 th September 2022
Supporting SMEs in the Net-Zero Age: From Audits to Saving	Brussels, Belgium	4 th July 2023
Other International Events		
LEAP4SME Session at Behave conference	Online	21 st April 2021

LEAP4SME Workshop at EU Sustainable Energy Week 2021	Online	11 th October 2021
LEAP4SME Workshop at the Race to Zero Campaign	Online	24 th February 2022

Sections 3.2 and 3.3 provide details on the International Observatories and other international events, including a sub section for each meeting.

3.2. International Observatories

3.2.1. Rome 15-16th September 2022

The central meeting of the “International observatory meeting on energy efficiency policies for enterprises and SMEs” was held in Rome (Italy) on 15 and 16 September 2022 at the Liaison Office of the European Parliament.

During this 2-days meeting representatives and experts from 15 European National Energy Agencies (Industry and SME areas), European Commission (DG-ENER, CINEA and JRC), UNIDO (United Nations Industrial Development Organization), MEDENER (Mediterranean Association of National Agencies for Energy Management), Green Industry Platform, Polytechnic University of Milan, Chamber of Commerce of Malta, and European Energy Network, shared good practices and addressed the most relevant topics on EE in SMEs.

The main objectives underlying this international Observatory were to:

- discuss among National Energy Agencies, relevant international and local Organisations, the state of the art of the National and European policies for SMEs, their barriers and enabling factors to unlock the enterprises’ energy efficiency potential;
- look for links among SMEs and large enterprises policies;
- discuss on the topics of Energy Management Systems and Energy Audit policies/techniques for SMEs in view of the new Energy Efficiency Directive (EED) requirements.



Figure 26 Participants to the 15-16 September 2022 International Observatory meeting

AGENDA OF THE MEETING

15 th September 2022		
14.30 - 17.00	Energy efficiency policies in SMEs	Enrico Biele, LEAP4SME Coordinator Dearbhla Stapleton, Programme Manager SME, SEAI Gabriele Brandl, Senior Expert, AEA Lorna Taliana, Senior officer Stakeholders Unit, EWA Thomas Björkman, Programme manager, Swedish Energy Agency Carlos Herce, Senior Researcher, ENEA
16 th September 2022		
17.00 - 18.30	International programmes and initiatives for Industry, large enterprises and SMEs	Oronzo Dalosiso, Project Manager, CINEA Marco Matteini, Senior industry officer UNIDO Hannes Mac Nulty, Senior expert, Green Industry Platform
9.45 - 11.15	Assessing, implementing and building effective policies for industry and SMEs in Europe	Enrico Cagno, Full Professor, Polytechnic University of Milan Roberta Boniotti, Secretary General, MEDENER Akamitl Quezada, Senior Industry Expert, German Energy Agency-DENA

11.15 11.30	-	Coffee break	
11.30 12.45	-	Plans and techniques to save gas in industry and enterprises - Joint meeting with the EnR IWG	Paolo Calau, ADENE EnR Presidency 2022 Karolis Janusevicius, Head of Energy Efficiency, Lithuanian Energy Agency Roberta Boniotti, Secretary General MEDENER
13.00 13.40	-	Lunch	
13.40 15.40	-	The new architecture of Article 11 EED recast and national experiences in policy implementation	Edyta Nowak, Policy officer, European Commission DG-ENERGY Enrico Biele, EnR Industry and enterprises working group Chair Anders Pousette, Programme manager, Swedish Energy Agency Marcello Salvio, Head of EE in the Economic Sectors Unit, ENEA Paulo Calau, Head of Industry, Portuguese Energy Agency

The meeting was divided in five 1.5/2h sessions:

- Energy efficiency policies in SMEs.
 - Topics: assessment of energy consumptions at national levels for policy purposes; energy efficiency barriers; insights from the policy implementation; evaluation of national programmes; results of in-depth assessments in the Countries of Austria, Croatia, Greece, Italy, Malta, Poland, Portugal, Slovakia, United Kingdom.
- International programmes and initiatives for Industry, large enterprises and SMEs.
 - Topics: Green Industry Platform and I-GO initiatives, UNIDO cooperation programmes for energy efficiency in developing countries, CINEA Life programme and results from EU funded projects on energy efficiency in industry & SME.
- Assessing, implementing, and building effective policies for industry and SMEs in Europe.

- Topics: Results from LEAP4SME analysis and surveys; Energy efficiency policies in SME in South-Eastern Mediterranean Countries; in-depth assessments in the Countries of Austria, Croatia, Greece, Italy, Malta, Poland, Portugal, Slovakia, United Kingdom
- Plans and techniques to save gas in industry and enterprises.
 - Topics: Save Gas for a Safe Winter; national plans on energy saving in industry and enterprises; the EnR study on national measures to save energy; industrial energy efficiency and measures to save gas in Lithuania.
- The new architecture of Article 11 EED recast and national experiences in policy implementation.
 - Topics: Presentation of new article 11 EED (ex-art.8); experiences of article 8 policy implementation, barriers and challenges in managing energy audit obligation schemes in different Member States.

PROCEEDINGS OF THE MEETING

Session 1 - Energy efficiency policies in SMEs

Enrico Biele, ENEA introduces the international observatory, summarising its objectives and the chosen approach, namely organising discussion with keynote speeches and presentations to address the topics. In terms of participants, representatives involved belong to: 15 National Energy Agencies (Industry and SME areas), CINEA, European Commission, UNIDO, MEDENER, Joint Research Centre, Green Industry Platform, Polytechnic University of Milan, Chamber of Commerce of Malta, European Energy Network. An overview of LEAP4SME achieved results and next steps was provided to set the scene.

Dearbhla Stapleton, Sustainable Energy Authority of Ireland describes the Support Scheme for Energy Audit (SSEA), conceived with three objectives: engaging SMEs in the topic of energy efficiency, enhancing their knowledge of energy use and providing them with information to support investment decisions. SMEs spending at least €10,000 on energy per year are offered a voucher of € 2,000 to get an energy audit with an SEAI Registered Energy Auditor (such amount implies that around 90% of audit cost is covered). In particular, the application process is the following: once eligibility is confirmed, the SME automatically receive the audit offer, the auditor prepares the report after a site visit and, once the audit's

completeness is verified by SEAI, payment is provided to the auditor. SSEA success factors are: the easy access to the support through online application, the supply chain of energy auditors and advisors, and the data gathering on energy audits to inform future SMEs' support measures. Since the launch in July 2021, 1,035 vouchers have been issued and payments have almost reached € 1,000,000 (August 2022 data). Sectoral breakdown of applicants shows a prominent role of Manufacturing (33%), followed by Accommodation and food services and Wholesale and retail trade (21% each). Solar photovoltaic is recommended by almost half of the audits (48%); energy management and LED lighting are also important, recommended by 14 and 13% of the audits. In July 2022 a scheme review has been performed, developing recommendations such as surveying SMEs on implementing recommendations (there was no obligation to do so) and investigating why renewable heat is not often recommended.

Gabriele Brandl, AEA presents the landscape for energy efficiency policies for SMEs in Austria. Different support measures are in force, represented by Klimaaktiv, environmental investment subsidies and federal support programmes. Klimaaktiv operates at five levels to reduce CO₂ emissions, namely information, network of partners, quality standards, training, advice, and support. According to the second measure, subsidies up to 35% of environmental effective investment costs are provided relatively; by contrast, the third measure financially supports energy audits, trainings of energy consultants and awareness raising events. In this context, LEAP4SME's observatories and trainings are organised, involving relevant stakeholders.

Lorna Taliana Mintoff, EWA highlights that in Malta SMEs are important as number, labour force employed, and value added to union and local economies. SMEs can be at the same time beneficiaries, participants, and enablers in implementing sustainable measures. Several schemes exist to support SMEs in the green transition: EWA role is creating dialogue with SMEs to better understand their needs and, on this basis, updating the existing incentives, such as the energy audit scheme. To do so, SMEs should be engaged as participants in stakeholders' initiatives, such as workshop and data collection. Finally, SMEs are the enablers of support measures since they can share information on implementing and promoting sustainable technologies and practices. According to the existing Energy Audit for SMEs scheme, an SME can apply for having financial support to develop an energy audit. Since its

launch in 2018, the scheme has financed 22 energy audits in three years; after a first assessment, a new updated scheme was launched in January 2022 and 34 audits were supported in two years. Some recommendations from the assessment are: the insufficiency of the financial support, the need to increase the range of eligible NACE codes, and the necessity to more help in implementation; all of them were incorporated in the revised scheme. In the period 2021-2022 energy auditors training were provided and the MERCA and WE MAKE projects were launched. The first one targets specifically the food retail sector, whereby the first approach is done by the Chamber and then the support is given by the Agency, trying to make the best of sectoral knowledge and stakeholders communication channels. In particular, 21 energy audits kick-started among all the participants of the project: bilateral meetings have shown that energy improvements were ongoing but more guidance to obtain financial support was needed.

Thomas Björkman, Swedish Energy Agency describes the National regional fund program, which supports energy efficiency in SMEs, is co-financed by the EU and SEA and ran from 2014 to 2021. Starting from the main barriers, namely companies lacking knowledge, time and money, different support solutions are made available to different types of companies. For example, companies consuming more than 1 GWh are provided with support for energy audit and the possibility to participate to networks for energy efficiency. The support for energy audit is available also for companies consuming more than 300 MWh, together with the possibility to be involved in regional nodes; by contrast companies consuming less than 300 MWh can be assisted by a coach for energy and climate. All SMEs can benefit of technical development and innovation, energy services and online learning. The total cost of the program was 52 million Euro and financial support was provided to 888 companies (288 of them were involved in one of the 34 networks for energy efficiency). Beyond the companies receiving financial support, 1350 companies were coached by energy and climate coaches in 150 municipalities (more than half of the total number of Swedish municipalities). Total estimated saving is 251 GWh, implying a 12% improvement in energy efficiency; the most used measures were those on heating premises, ventilation, and lighting. In the SMEs that received support to implement an energy audit several improvements were observed in the following two years, for example in terms of increases in: implemented measures, involved personnel and energy policies decided by the management.

Carlos Herce, ENEA presented a focus on results obtained in the LEAP4SME project related to the characterisation of SMEs¹¹ and the mapping of energy consumption at national level^{12,13}.

Session 2 - International programmes and initiatives for Industry, large enterprises and SMEs

Oronzo Dalloiso, CINEA presented the analysis of 41 EU-funded projects supporting the market uptake of energy efficiency measures in industry and services (15 H2020 projects and 25 Intelligent Energy Europe II). Main results were: performing 3,600 energy audits, training 10,000 people and reaching 4,500,000 people, achieving 3.491 GWh/year of primary energy saving. This assessment is built on different tasks, ranging from review of literature and internal project documents up to phone call interviews, site visits and industry stakeholder survey. It is highlighted that company decision makers do not see energy efficiency as central issue, if it is not connected to the core business of the company. Indeed, only one fourth of total proposed interventions are adopted. Such adoption rate is still low but at the same time it demonstrates the high energy efficiency potential still to be exploited. The role of EED recast is mentioned relative to Art.11 and Annex VI (including two additional criteria for energy audits) and the identification of energy efficiency measures and the potential for cost-effective use or production of renewable energy.

Marco Matteini, UNIDO highlighted that EnMS, together with energy system optimization, is the current main thematic area on UNIDO's interventions. Some of the achievements reached up to now are: more than 650 EnMS experts qualified and more than 500 companies directly supported throughout EnMS implementation, with 4-15% of energy saved per company in the first year of EnMS with little or no capital investment. This energy saving implies a reduction in energy expenditure and in CO₂ emissions, two indirect benefits of energy efficiency. In order to maximise benefits, it should be considered that energy savings are influenced by different

¹¹ LEAP4SME Deliverable 3.2 Report on SMEs characterization to address an effective policy development.

¹² LEAP4SME Deliverable 2.1 *Mapping SMEs in Europe: Data collection, analysis and methodologies for estimating energy consumptions at Country levels, 2021*.

¹³ Herce C., Biele E., Martini C., Salvio M., Toro C., Brandl G., Lackner P., Reuter S., *A methodology to characterize energy consumption in small and medium-sized enterprises at national level in European countries* (2023) Clean Technologies and Environmental Policy, DOI: 10.1007/s10098-023-02606-z

factors impacting on the linkages among people information and technology. The UNIDO EnMS Capacity Building & Implementation Programme start with an EnMS awareness seminar, followed by an EnMS user training, then an expert training and finally an Energy Performance and Management Improvement training. Another program is Energy system optimization: energy savings opportunities from systems (15-30%) are far greater than from individual components (2-5%) and in most UNIDO countries the availability of services for industrial energy systems assessment is limited. Several case studies are provided, on compressed air, refractory material and ESCO services. Another program devoted to assist SMEs to kick-start energy management and energy efficiency interventions is presented. It established 3 Industrial Assessment (PEVI) Centers, assisted 46 SMEs from 18 different subsectors, trained 132 workers and identified 364 energy efficiency opportunities, corresponding to 71.5 GWh/year and 18,300 TonCO₂eq/year of savings.

Hannes Mac Nulty, Green Industry Platform describes the activity associate to the UNIDO industry working group, which helps in creating connections, learning and collaborating: for example, SMEs are enabled to easily access existing supports and business stakeholders are empowered to develop missing supports collaboratively. The I-GO suite for SMEs tools are presented, in particular: 1) SME support centre, making available training, technical assistance and financing solutions 2) I-GO assistant, providing concrete recommendations and tailored support services 3) Implementation manager tool, analysing opportunities and tracking performance. These tools are used also to obtain benchmark information. The I_GO initiative also promotes networks, implying several benefits, for example facilitating experience sharing and collaboration between members and enabling members to adapt existing and/or develop new resource efficiency knowledge and support services. Finally, mapping, analyses and dashboard are provided on the I-GO website, allowing to search and compare funding and initiatives by implementing and funding organization, as well as by type and sector. Such information is used also for training purposes.

Session 3 - Assessing, implementing and building effective policies for industry and SMEs in Europe

Enrico Cagno, Polytechnic University of Milan reported on his long experience with energy efficiency in SMEs, highlighting how the approach to the problem can be different depending



on the perspective adopted: the corporate decision maker, the policy maker, the financial institution, etc. The problem is complex, and Prof. Cagno emphasised that it can only be solved by taking the decision maker's perspective and trying to fully understand the adoption and business context especially for SME. The decision-maker is responsible for the adoption of an EPIA and her/his perspective is crucial and company performance-related. The barriers he perceived are the ones that can hinder and stop the adoption process. Decision is taken on perceived barriers, not on the real ones. Prof. Cagno presents some results from non energy-intensive SMEs highlighting that economic barriers are the most relevant, but need to keep the business ongoing and information issues are relevant too (mainly due to difficulties in the relationship with external actors). Technologies are often perceived to be not adequate or available and there is a general lack of interest in energy efficiency related technologies (low energy consumption, or perception to be already efficient) while behavioural barriers are perceived as minor issues. Smaller enterprises are not aware of the relevance of their energy costs and having effectively lower capital availability, is more difficult for them to evaluate investments but they are more agile to implement the interventions. Prof. Cagno highlights the importance of information and economic drivers, showing the need for enterprises to be supported not only by public institutions but also by external stakeholders involved in the supply of energy-efficient technologies and practices such as industrial associations and groupings, as well as service and technology suppliers. Prof. Cagno points out that SMEs cannot be treated as a whole, since larger enterprises differ widely from smaller ones. His presentation then focuses on energy efficiency measures highlighting how it is fundamental to understand the relationship between EPIAs' characteristics and business performance and to better identify/quantify/evaluate the impacts of EPIAs' adoption. Understanding which characteristics of the business and application context influence the relationship is still a big challenge.

Akamitl Quezada, German Energy Agency-DENA describes some examples of energy efficiency policies and initiatives in Germany and their relation to SMEs. In particular Energy Audits and EnMS, Energy Efficiency Networks (EEN) and Energy Efficiency through Digitalization in SMEs regulation, founding and information are described in detail.

German legislation resulting from Article 8 of the EU Energy Efficiency Directive and an evaluation of the energy audit program for obligated companies is first briefly introduced. The

Federal Agency for Energy Efficiency (BfEE) has conducted quantitative and qualitative analysis of the audits (2.751 companies in 2021). Audits are voluntary for SMEs whose audits are about 1/3 of the total. There is a federal energy consulting program for SMEs that provides a subsidy of 80% of eligible consulting costs for a maximum of 6,000 Euros. The main motivations of SMEs toward energy consulting are better control of energy costs, strategic decision for environmental protection, better planning of investments, get information about current state in the company and comply with conditions for founding programs. Only about 1/3 of SMEs that performed an audit were satisfied with the results and only 12% of the proposed measures regarding compressed air generation, ventilation and acclimatization were implemented. Main reasons why SMEs do not implement suggested measures are high investment costs, other priorities and not rentable measures.

Different policies in Germany promote EnMS and about 1/3 of certified ISO 50001 EnMS in the world are in Germany (5786 companies) however there are still some barriers to overcome for their wider deployment. Hard barriers are related to lack of time, staff, expertise and financial resources and to EnMS high implementation costs. More moderate barriers relate instead to lack of awareness of the necessity for EnMS, lack of transparency of their energy consumption and costs, lack of information on support opportunities, lack of trust in external consultants, insufficiency of qualified energy service providers and uncertainty on the policy framework.

In Germany, an “Energy Efficiency Network” (EEN), also called “Energy Efficiency and Climate Protection Network” is a voluntary, methodical, goal-oriented, and non-bureaucratic exchange of experiences and ideas between its participants (companies, municipalities, etc.). The EEN participants define an energy-saving goal for the entire network and single saving goals based on the results of energy audits or similar standard procedures. The network activities are followed and supported by experts (operators, moderators, and consultants) during the entire running time of usually 2-3 years. The first EEN in Germany dates to 2002 followed by several initiatives still active today (2021 –2025: Initiative Energy Efficiency and Climate Protection Networks - IEEKN). The German networks initiative includes 23 primary partners (The German Government - Ministry of Economics and Ministry of Environment and 21 associations and chambers) and is managed by DENA, the participation is voluntarily, and the companies do not receive direct financial support from the federal government. 346 EEN have been



registered since the beginning of the initiative (88 EEN are currently active and 4 are in creation) and more than 2.500 companies are participating or have participated at EENs. About 47% of companies were SMEs (29% 50 to 250 employees and 18% < 50 employees) while 38% of companies employed ISO 50001 and 28% energy Audits DIN EN 16247-1 to identify energy efficiency measures. Examples of EEN were presented, and the main benefits were summarised such as reduced energy costs with expert guidance, obtain faster and more results than companies not participating in EENs, make company's commitment on energy efficiency visible with the official diploma from the federal government, obtain faster and more results than companies not participating in EENs.

Finally, the focus shifted to digitisation policies with examples of policies supporting energy efficiency through digitisation in companies. The founding program "energy and resources efficiency in the economy" includes acquisition and installation of hardware (sensors) and software for energy management in form of subsidy of 30 % (40 % for SMEs) or a credit (max. 15 million). The competence centre for energy efficiency through digitisation (2022-2027) supports the building and industry sectors, including SMEs with events, guidelines, and exchange between different actors. Moreover since 2017 the Energy Efficiency Award is an annual contest with prizes to finance projects in different categories including digitalization.

Roberta Boniotti, MEDENER introduces the topic of Energy Efficiency in Industry and SMEs in the Mediterranean region. Ms. Boniotti is the Secretary General of MEDENER the Mediterranean Association of National Agencies for Energy Management. It brings together agencies in the Mediterranean region in charge of energy efficiency and the promotion of renewable energy sources. MEDENER brings together 13 National Energy Agencies from the northern and southern shores of the Mediterranean. Since 2018, it coordinates the meetMED project "Mitigation enabling energy transition in the Mediterranean region" funded by DG NEAR – EU Commission which supports the energy transition in 8 beneficiary countries: Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Palestine and Tunisia. The main result of the meetMED Project is the creation of the meetMED Regional Expert Network meetMED which gathers energy experts from energy governmental agencies and departments of 13 Mediterranean countries. The meetMED REN experts work together to achieve a twofold end: on the one side, strengthening and multiplying technical expertise to support the national governments to implement EE and RE policies and measures; on the other side, creating

regional tools, such as regulatory and monitoring ones, in order to overcome bottlenecks, which might hamper the transition to cleaner energy at the national level. Energy efficiency and renewable energy strategies and policies are therefore keys to the sustainable development of every country and except for Libya, every meetMED target country has put in place national EE/RE strategies but its implementation is evolving at a slow pace. Jordan and Tunisia are the countries with the most ambitious EE targets while Egypt and Morocco are the countries with the most ambitious RES targets. Most of the countries have experience in NEEAPs (<50% is working on a 2nd NEEAP) and the main target sectors are Buildings and Industry. Regarding the energy efficiency in the industry sector SEMCs countries have been working on the optimization of energy consumption for audited companies and industrial studies on innovative technologies. Algeria, Egypt, Jordan, Palestine, Morocco and Tunisia have mandatory energy audits in place for energy-intensive industries and Lebanon plans to enforce energy audits for industries with an energy consumption of over 400 toe/ year. The main policy recommendations for the industry sector arising from the first activities of the meetMED project are related to the need to establish energy management norms (ISO 50001 or equivalent) as well as assess energy-saving opportunities and report on their progress periodically and to define minimum energy performance standards for industrial equipment together with building capacity for energy auditors and raising awareness on energy efficient industry and SMEs. Some of the countries of the meetMED countries (Energy Agencies from Morocco, Tunisia, Jordan, Palestine, and Lebanon) have been involved in the LEAP4SME survey and the results obtained highlight that the most relevant energy audit barriers for SMEs in these countries are the lack of financial and human resources and of knowledge, awareness and information while the most relevant energy audit needs are incentives, qualified auditors and the related need for training. The recommended measures are mainly focused on incentives, institutional support in terms of training and promotion of standardization. The most important co-benefits highlighted by the survey are represented by the reduction of costs (energy, maintenance, and operational, and raw materials), and related increase in the process's overall efficiency. A relevant co-benefit is the importance of including renewable energy sources. Concerning Policy schemes and obligations to carry out energy audits in SMEs the agreed option about the policy schemes is to consider the SME size (number of employees), the sectors and also the energy consumption. All the participants agreed also on

the need for obligations to carry out energy audits and implement EE measures for energy-intensive SMEs.

Session 4: Plans and techniques to save gas in industry and enterprises

Roberta Boniotti, ENEA, introduces the European Gas Demand Reduction Plan, to reduce gas use in Europe by 15% until spring 2023. In July 2022, the European Commission presented the proposal for a Regulation “Save gas for a safe winter”. Following a simplified legislative procedure, Member States reached the political agreement on a voluntary reduction of 15% in gas consumption from August 2022, becoming mandatory in the event of an alert.

Paolo Calau, ADENE EnR Presidency 2022 describes the main initiatives for Industry and as included in the EnR “Energy & Gas Saving Plans 2022-2023” report. In this report all 24 European Energy Network agencies were consulted on measures being considered or implemented to meet the target reductions on gas usage and overall energy savings (information from agencies labelled alphabetically in the supplemental material spreadsheet). Individual measures are labelled by their focus on energy/gas savings, water savings, both energy/gas and water savings, or no associated savings estimated from measure. They are also classified according to the period in which they are expected to take effect. Main measures for the industry sectors are Enterprises both temporary (for example energy intensive sectors authorized to use oil, Gas auction to reduce industrial gas consumption etc) and for long term savings (R&R plans to decrease industrial emission) focused on electric energy/gas savings and include information and awareness campaigns and updating National or Local Energy and Climate Action Plans.

Karolis Janusevicius, Lithuanian Energy Agency describes the energy efficiency framework in Lithuania. The Lithuanian Energy Agency is 100% owned by the state of Lithuania and its key functions are specified by the Energy Law of the Republic of Lithuania. These functions are mainly related to policy making and implementation including analysis and research activities.

Lithuanian industry, in the years 2000-2019, gave a large contribution to reducing energy consumption (-13,3 TWh) although consumption has increased due to foreign investment and export possibilities. The methodology of energy audits in industry was approved in 2015 and became mandatory for large companies in 2017. Regarding the Energy Saving Plan in

Lithuania actions and recommendations are directed to public sector (mandatory), households, service sector and industry; The plan includes immediate actions such as behavioural change measures and rapid implementation and rapid return on investment measures and long-term measures with the goal of a cost reduction equal to 1,5% of annual GDP.

Future challenges to be faced include:

- Providing financial support to states is not enough, but methodical support remains necessary (based on previous experience for 2018-2021).
- The energy performance gap remains unknown and there is a lack of reliable data to quantify and manage it.
- Growth in energy demand in all sectors due to improved standards (living, working, consumption)

Session 5: The new architecture of Article 11 EED recast and national experiences in policy implementation

Edyta Nowak, DG ENER describes the Art. 11 EED recast proposal. The main change will be from a definition of obligated parties based on the size of enterprise to another based on the level of energy consumption. An EnMS will be mandatory for large energy consumption, and EnMS or energy audits will be required for enterprises having energy consumption higher than specific thresholds. Follow-up to the audit recommendations is introduced as well as programmes to encourage not obligated enterprises to develop energy audits. Reporting for data centres with a significant energy consumption is introduced and Annex VI provides additional criteria for energy audits. After the vote on ITRE report in the European Parliament Plenary on 14th September 2022, now the process will continue with the negotiations and formal adoption of EED recast by the co-legislators.

The session continued with national experiences on the management of art.8 and the corresponding policy measures, in particular with presentations from **Anders Pousette, Swedish Energy Agency, Marcello Salvio, ENEA, and Paulo Calau, ADENE**. Anders Pousette presented the state of play of energy audits in Sweden, the large companies in the current and new article provisions and opened the floor to a set of interesting questions for the future of article 8. Marcello Salvio focused on the implementation of article 8 in Italy, the role

of KPIs and the verification processes carried out by ENEA. Paulo Calau introduced and explained the Portuguese Energy-Intensive Consumption Management System (SGCIE), the benchmarking activities and how the current system will be helpful for the provisions of the Recast EED. Moreover, **Enrico Biele**, as **EnR Industry and enterprises working group Chair**, illustrated the activities of the working group carried out in the context of EED article 8 and how they will be aligned with the new provisions, reiterating the positive approach and the need for further cooperation among National Energy Agencies.

CONCLUSIONS AND RECOMMENDATIONS

During the presentations and the fruitful debate several recommendations and priorities to develop effective policies emerged:

- Exploit synergies and avoid duplication with existing international/European initiatives.
- Align engagement with and within large corporations.
- Enable SMEs to easily access existing supports according to their needs.
- Promote the creation of networks of SMEs and auditors to (also informally) exchange experiences.
- Empower business stakeholders to develop missing supports collaboratively.
- Support actions and synergies among Chambers of commerce, associations, financial institutions to engage the SMEs.
- Pay attention to the high prices of energy (electricity, gas) which are much more a priority than any other topic in this period.
- Simplify the policy schemes in order to increase the effectiveness, providing a continuous support to the SMEs.
- Evaluate not only the energy benefits in the service phase. It is worth to underline the importance of Non-Energy Losses (NELs), Implementation of Non-Energy Benefits (NEBs)/NELs, Secondary benefits/losses, etc.
- Understand the relationship between EPIAs' characteristics and company performance to try to better identify/quantify/evaluate the impacts of the EPIAs' adoption.
- Consider the real challenge of understanding which characteristics of the business and application context influence the relationship.

- Tailor the policies as function of the size and activity of the target companies. It is apparent that enterprises cannot be dealt as a whole, in which larger enterprises largely differ from smaller ones.
- Segment the SMEs as function of the “turnover” or “number of employees”, but the two factors should be used separately. The “number of employees” better explains the company organisation and behaviour (not only for energy) and the “turnover” could be better substituted with more informative ones (i.e., profit-related features).
- Recognize the fact that energy Intensive enterprises, being energy their core business feature, are often already aware of the potential of EPIAs.
- Evaluate the EPIAs with respect to the full spectrum of operational performance could be an effective approach to engage Non-Energy Intensive SMEs, which are often unaware and little interested.

3.2.2. Brussels 4th July 2023

LEAP4SME organised a high-level energy efficiency conference at the European Parliament. Hosted by MEP Patrizia Toia, Vice-Chair of the Industry, Research, and Energy (ITRE) Committee. This event includes a keynote speech from the DG ENER on the role of SMEs and businesses in the EED recast, a presentation of the project's highlights for policy makers, a round table with two project partners EESC and Eurochambres, and the conclusions from CINEA. After this event the second meeting of the international observatory on energy efficiency in SMEs took place in Brussels focused on “**Supporting SMEs in the Net-Zero Age: From Audits to Saving**”.

The event brought together policy makers, national energy agencies, business associations and other key stakeholders in discussion about creating and implementing more effective energy efficiency policies for SMEs. It was an opportunity to gather information from EU policy makers on the latest developments of the EED Recast and to better understand the role of industry, businesses, and SMEs in the updated Directive.



ENERGY EFFICIENCY POLICIES: INCREASING SME SUSTAINABILITY

Afternoon Session

**International Observatory on Energy Efficiency in SMEs:
'Supporting SMEs in the Net-Zero Age: From Audits to Savings'**

Brussels, 4 July 2023

Residence Palace, Polak Room, 155 Rue de la Loi

AGENDA OF THE MEETING

4 th July 2023		
14:00 - 14:10	Introduction and background on the International Observatory Sessions	Enrico Biele, LEAP4SME Coordinator
14:10 - 14:25	No net zero without SMEs	Marco Marchese, OECD Policy Analyst
14:25 - 14:40	EU initiatives for SMEs: the Covenant of Companies for Climate and Energy	Eero Ailio, Senior Advisor DG Energy, European Commission
14:40 - 15:40	Energy audits and EnMS: key messages from the project National Observatories, programme assessments and policy implementation	Introduction and moderation Claudia Toro, ENEA Panellists: Marcello Salvio, ENEA, Paulo Calau, ADENE, Karolina Loth-Babut, KAPE Q&A and open discussion
15:50 - 17:20	Supporting small businesses in the net-zero age: traditional methods, innovative approaches and ongoing initiatives	Adrianna Threpsiadi, EST Ana Cardoso, ADENE
	The role of SMEs in the Covenant of Companies for Climate and Energy	Karen Clemens, Deputy CEO and Vilte Kaminskaite, Head of Operations - Low Europe Matthias Agius, EWA Stanislav Laktis, SIEA

PROCEEDING OF THE MEETING¹⁴

Enrico Biele, ENEA introduced the LEAP4SME International Observatories on Energy Efficiency & Energy Efficiency policies in SMEs and outlined the program of the meeting.

Marco Marchese, OECD presented a methodology to assess the environmental footprint of SMEs and some estimates from a pilot dashboard exercise. The methodology is based on the use of weights at two-digit sector level, namely output weight (i.e., SME % of value added) and employment weight (i.e. SME % of employment). Five indicators are considered: SME greenhouse gas (GHG) emissions, SME energy consumption, SME GHG emissions (carbon) intensity, SME energy intensity SME energy price burden.

The main results of the assessment can be summarised as follows:

- Energy consumption is influenced by the size of SMEs business sector.
- Business sector accounts for 43% of total energy consumption and 80% of total emissions in the EU, with relevant changes among countries.
- The energy intensity is affected by the industry composition, as well as by the average energy efficiency of the sector. At its turn, energy intensity affects the national energy mix.
- Energy costs increased significantly for SMEs from 2018 to 2022.

The policy responses to the 2022/2023 energy crisis devoted to SMEs are also described, showing that untargeted price-caps have been the most common option whereas targeted grants have mostly been used for energy-intensive and trade-exposed sectors. Untargeted price support, besides not being a long-term solution, conflicts with other major government objectives, such as taming inflation and fostering the green transition. A progressive shift from full price caps into partial price caps, applied to electricity or gas, has been observed in time. Finally, digitalisation and EE measures for SMEs in different countries are assessed, referring to: the tailored energy advice programmes for small businesses implemented in Australia, the support to the implementation of digital Energy Management Systems in India, the online calculators giving SME-targeted advice on energy savings, the support for energy-saving projects in Japan. A pilot project on SME greening and green entrepreneurship policies in Portugal, with support from DG Reform, is also mentioned.

¹⁴ This section was prepared with the collaboration of G. Goumas, CRES.

Eero Ailio, DG Energy, European Commission in his presentation “**Engaging companies in the Energy Transition**” presented an overview of the Covenant of Companies a new pilot initiative led by the European Commission (DG Energy) to encourage and support companies to step up their contribution to a clean energy transition. This initiative provides practical, step-by-step guidelines and technical assistance to European companies to help them set and implement science-based targets resulting in the decarbonisation of their businesses. The program recognizes measures taken by companies with Seal of Approval awards. The initiative offers a pledging scheme with several levels of recognition (entry, bronze, silver and gold). The entry level of commitment looks at finding ways to trigger a company’s awareness and understanding of which actions are crucial for business and planetary survival. Bronze, silver and gold encourage and support companies to take one or more concrete measures to reduce their GHG emissions. The programme encourages business investment in clean energy solutions/technologies to help improve business performance while mitigating climate change and it provides practical advisory services to European companies to help them decarbonise.

The first call has been in June 2022 and the second from May 2023. The Pledging is open to companies in all 27 EU Member States (and groups of companies) and the Technical Assistance can be delivered in Bulgarian, Dutch, English, French, German, Lithuanian, Romanian and Spanish.

The session “**Energy audits and EnMS: key messages from the project National Observatories, programme assessments and policy implementation**” was focused on the national observatories carried out under the project with the aim of outlining the main recommendations collected. The session started with an introduction by **Claudia Toro, ENEA** followed by a discussion involving **Marcello Salvio, ENEA, Paulo Calau, ADENE** and **Karolina Loth-Babut, KAPE**.

Claudia Toro in the introduction traced how the LEAP4SME project interacted with stakeholders through trainings, surveys, and national and international observatories. Particularly with the national observatories, it was possible to collect recommendations to improve the adoption of energy audits and implement energy efficiency interventions in SMEs. These recommendations were shown divided in two subgroups: recommendations collected mainly from policy makers and funding bodies, and recommendations collected from SMEs

and trade associations. In the first group, the focus was mainly on tailoring policies and building a specific policy framework while in the second group was on addressing financial constraints and increase SMEs awareness on energy efficiency and energy audit.

The main outcomes in terms of recommendations from observatories and policy assessment in the nine countries can be summarized as follow:

- Tailoring support through strategic segmentation (in term of size and activity of the target companies).
- Simplify the policy schemes and balancing the economic and supportive policies.
- Encouraging EE networks as cost-effective actions for SMEs.
- Promoting the development of good quality energy audits and work on the availability of benchmarking information at SMEs level, to inform the decision-making process at company level.
- Support actions and synergies among Chambers of commerce, Business associations, financial institutions to engage the SMEs.

The introductory session was followed by a discussion involving **Marcello Salvio, ENEA**, **Paulo Calau, ADENE** and **Karolina Loth-Babut, KAPE** on the following specific topics:

- Good practices in Italy, Poland and Portugal. (Regional or national programmes in Italy, Poland and Portugal)
- Improvement of Energy Audits programmes and implementation of EPIAs in SMEs
- Experience and lesson learned managing Art. 8 that can be transferred to SMEs programmes

Karolina Loth-Babut, KAPE emphasised how funding investments is necessary to achieve national energy efficiency goals. She suggested the organization of awareness campaigns to inform the SMEs in Poland about the national and regional programs being implemented, which include financial incentive for EA. She also suggested educational tool to inform and train companies also from a technological point of view and “One stop shop” as a useful way for improving energy efficiency in SMEs. Moreover, energy audits procedures and templates, considered now the standard for large enterprises, can also be used successfully for SMEs with the proper tailored simplification.

Marcello Salvio, ENEA reviewed existing good practices in Italy as regional programmes for energy audits for SMEs, the Energy Intensive Industry programme and TREND the Regional programme including partial financing of the EA emphasising the importance of a collaborative approach between companies and trade associations as experienced with the large companies involved in Art. 8. The application of Art. 8, with the large number of energy audits and data collected also allowed to develop benchmarking analyses, guidelines and tools for different production sectors that can also be very useful for SMEs.

Paulo Calau, ADENE spoke about Portugal's long experience with mandatory audits and the need to invest in capacitation and training for SMEs on energy monitoring and energy audits, stressing the necessity to match EED target/regulation and companies' energy needs. He also spoke about the Portuguese benchmarking platform where specific energy consumption data regarding several business sector have been included based on the energy audit collected with the SGCIE program. He also suggested that suppliers, Energy Auditors and businesses use the same platform or One Stop Shop in order to analyze the available energy data of energy audits and develop available technical information. Reviewing the various incentives available to companies, he also proposed the idea of an incentive system based on the savings targets achieved by the company. And to increase the added value of the Energy audits and the energy performance certificate (EPC).

Adrianna Threpsiadi, EST, in her presentation “**Supporting small businesses in the net-zero age: traditional methods, innovative approaches and ongoing initiatives**” started by describing the existing policies and programs to support SMEs across EU. The most successful ones are characterized by: integration, high longevity, targeted at specific sectors, reduced complexity and effectiveness in communication and engagement. In the SME energy audit market the most common barriers are financial and organizational, with a different impact depending on the SME size. Long-term policies and support programs play a key role against these barriers, which may also be eased emphasizing both energy and non-energy benefits, encouraging strong networks of local government representatives, SMEs and auditors, introducing standards for auditors and minimum quality standards for audits, linking audits to holistic support programs. In order to promote energy efficiency and audits, professional/industry-related should also be considered, such as the access to energy efficiency experts and the level of internal competencies, as well as personal/employee attributes, such as

management sensitivity to energy efficiency, entrepreneurship and positive working relationships. Finally, qualitative results from expert interviews were presented, focusing on two main issues: engagement with priorities and values, namely understanding the business model and widen the scope of engagement to climate change, and event-driven interventions and support, for example in terms of growth milestones, expansions and diversification and maintenance and repair services.

Ana Cardoso, ADENE, focused on the analysis of multiple benefits and proposed set of non-energy KPIs¹⁵. The literature review analysis of multiple benefits highlighted that non-energy benefits (NEBs) can counterbalance acknowledged barriers and increase the priority level for energy efficiency investments against others. IEA estimated that, if quantified and monetized, the inclusion of NEBs can shorten payback times by around 50%. NEBs are seldom considered when energy efficiency measures are evaluated. Therefore, gains are often underestimated or neglected. Scenarios on the estimation of multiple benefits¹⁶ were also presented, specifying that the quantification proposed should be analyzed carefully, as it is based on proxy values and strong assumptions. Savings potential appears to be higher for micro enterprises, which should face higher energy prices when compared with small and medium enterprises. When assessing non-energy benefits, the overall savings potential is significantly influenced by the water prices. The quantification constraints may be overcome through on-site measurements and direct contact with the enterprises, in order to fully assess energy, water and raw materials saving potential.

The last session of the observatory “The role of SMEs in the Covenant of Companies for Climate and Energy” was moderated by **Karen Clemens Low Europe**, with the participation of **Vilte Kaminskaite, Low Europe, Stanislav Laktis, SIEA** and **Matthias Agius, EWA** which discussed about barriers, drivers, measures and programmes for SMEs energy transition. **Matthias Agius, EWA** reported on Malta's experience highlighting how important it is to give support to SMEs and create connections among the companies themselves and with business associations to facilitate the exchange of experience and know-how. **Stanislav Laktis, SIEA** presented an overview of the main policies and measures in Slovakia for energy efficiency in

¹⁵ LEAP4SME Deliverable 6.1 *Report on the literature review analysis of multiple benefits*, 2022.

¹⁶ LEAP4SME Deliverable 6.2 *Report on impact scenarios framework and strategies to boost energy audits and energy efficiency implementation*, 2022.

SMEs and highlighted barriers and need for SMEs as resulted from the experience on the LEAP4SME national observatories. The main recommendations collected in Slovakia were related to increasing awareness and skills, tailoring the policies and support, address financial constraints and improve energy audit quality.

Vilte Kaminskaite, Low Europe in his presentation provided more details about the Covenant of Companies initiative and how it provides support to businesses. CCCE team of experts provides practical and tailored, free of charge advisory services to European companies to help them decarbonise. Two calls for technical assistance have been organised: the first call - June 2022 – April 2023 and the second - May 2023 – December 2023. The provided technical assistance included guidance documents and other useful resources available online (such as Country overviews of support measures and financing tools), but also peer-to-peer learning and masterclasses. The lesson learnt with the first call can be summarized as follow:

- No. 1 barrier – language, therefore, support in national language is highly appreciated.
- Most applicants – micro and small companies.
- Most interest from countries with fewer support schemes.
- Communication can be challenging due to limited resources/availability.
- Significant amount of time to establish precise scope of the support needed and the support must be bespoke.
- Process needs to be flexible (e.g., initial deadlines had to be extended) but it is important to make it clear.
- Local connections are critical.

CONCLUSIONS AND RECOMMENDATIONS

- The recast of EED underline the crucial role of energy audits as first key enabler of energy efficiency, particularly for SMEs.
- The new article 11 will focus on the increase of ambition of energy audits
- Other complementary tools devoted to SMEs should be 1) the quantification of Multiple-Benefits, 2) the development of roadmaps for decarbonization, and 3) the creation of energy efficiency networks.

- The role of banks and financial institutions should be enhanced in order to overcome the economic barriers of SMEs. A common framework for evaluating and funding the profitability of energy efficiency investments should be promoted.
- The agencies and business associations should combine their role on the development of supportive policies (information, capacity building, skills, awareness) with the creation of services and tools for SMEs. The creation of one-stop-shops (as a key tool to reduce administrative burden and homogenize available information) and the focus on Renewable Energy Communities are two hot topic that should be immediately addressed.
- The energy crisis has increased the awareness of SMEs in energy topics. The importance of energy efficiency is not only underlined by the reduction of costs, but with the need of backup technologies and security supply. Thus, energy efficiency and renewable deployment should be addressed together.
- The couple Energy Efficiency / Renewable Energy should be complemented with other aspects such as 1) the water-energy nexus, 2) a comprehensive environmental impact based on Life Cycle Analysis; and 3) the analysis of Multiple-Benefits.
- The energy efficiency policies for SMEs must be based on voluntary basis. Increasing the obligations should impact negatively on the competitiveness of the SMEs.
- Energy efficiency should be promoted as a business case to include the EE in the normal operation of the companies and self-motivate the enterprises to invest on energy efficiency.
- Despite the importance of SMEs as the backbone of European economy. The structural lack of energy data on SMEs is still a limitation to effectively evaluate the impact of energy policies.
- The effective engagement of SMEs remains a difficult task. Several approaches and tools should be promoted to increase the EE culture in the SMEs. Specifically, 1) the creation of energy efficiency networks, 2) the involvement of local authorities and organizations, 3) the increase of awareness campaigns, 4) tailoring policies for different SME sectors and sizes, 5) developing specific tools for SMEs, and 6) increasing the trust of SMEs on organizations and external suppliers developing specific platforms and regulatory framework.

3.3. Other International Events

3.3.1. LEAP4SME Session at Behave conference, 21st April 2021

LEAP4SME organised the online session 3C: *Improving energy policies and programmes: behavioural insights and barriers for enterprises* on 21st April 2021 within the Behave Conference.

Behavioural aspects and issues related to energy efficiency in enterprises appear at present to be less investigated than in other sectors. Moreover, difficulties in quantifying the effects of behavioural changes in terms of saved energy make sometimes these benefits not properly considered.

The first aim of the session was to open a constructive debate between experts from the Academic world and National Energy Agencies, to take hints and insights to be applied into policy evaluation/implementation. A snapshot on the state of the art of energy audit/efficiency policies and programmes for SMEs in 9 European area Countries has been provided during the session.

AGENDA OF THE MEETING

21 st April 2021	
3.00–3.10 pm	Welcome Enrico Biele (LEAP4SME), Kerstin Schilcher (AEA)
3.10–3.25 pm	Drivers to Energy Efficiency in Manufacturing Firms Mette Talseth Solnørda, The Arctic University of Norway
3.25–3.40 pm	Energy investment and energy management in for-profit companies Catherine Cooremans, University of Lausanne
3.40–3.50 pm	Snapshot on SMEs Energy policies in nine Countries

	Andrew Tod, EST
3.50–4.00 pm	Analysing the behavioural impacts of mandatory Energy Audits Chiara Martini, ENEA
4.00–4.10 pm	Sustainable behavioural change in companies from the Swedish PFE Thomas Björkman, SEA, Programme Manager
4.10–4.20 pm	The Italian Information and Training Programme: Evaluation of energy savings and analysis of drivers and barriers for industrial energy efficiency Michele Preziosi, ENEA
4.20–5 pm	Discussion Moderator, Speakers, Q&A with attendees

PROCEEDINGS OF THE MEETING

Mette Talseth Solnørdal, Arctic University of Norway, in her presentation “Energy management in manufacturing firms” highlighted those behavioural drivers, at organisational and individual level, are significant for industrial EE. She identifies four internal behavioural drivers for industrial EE – environmental leadership, absorptive capacity, organisation structures and roles, and translation competence. Research and policies tend to focus on economic and information barriers, but firm internal drivers are also important. Indeed, individual and organizational aspects such as management and competence are found to be important drivers for EE. She gave some details about the theory of absorptive capacity, referring to the firm’s ability to take in the information coming out from audits. Research found that education level of workforce, internal and external knowledge/ collaboration (e.g. with universities) to influence firm’s ability to this end.

Catherine Cooremans, University of Lausanne presented a contribute about the role of business strategy, business and financial logic in energy management and EE investments. She provided an example on how two companies with same types of characteristics (sector, size etc.) could be likely to have completely different behaviours that will influence EE decision-making and investment by organisations. A corporate investment decision is the

result of a dynamic process influenced by contexts, actors involved (or not) and investment characteristics. She summarised the key factors influencing the investment decision-making:

- Corporate culture and sub-cultures
 - Sub-cultures interact and compete i.e., professional and functional in for profit companies
 - Interest-influence matrix regarding energy issues – a key barrier to energy efficiency is that we have certain people with high-interest lower (and vice versa)
- Power – CEO and “core triad of heavyweight functions” (production, marketing and sales, finance)
- Strategic characteristics of investment (investment scope/ purpose)

Chiara Martini, ENEA, described the behavioural impacts of mandatory EE audits in the Italian context. The presented analysis highlighted that firms in different NACE sectors deal with EE differently and several variables play a role. In all examined sectors firms with a monitoring system of energy vectors have a higher implementation rate of EE measures: an energy audit must always be accompanied by a specific monitoring plan to be effective and useful for the company decision-maker.

Thomas Björkman, SEA, analysed the sustainable behavioural change in Swedish companies focusing on the Program for improving energy efficiency in energy-intensive industries. The program contributed to increase the energy culture or energy awareness in the participating firms. Such policy measure enables firms to engage in a virtuous path starting from Attention on EE aspects, passing by increased Knowledge thanks to energy audit and analysis and reinforced attitude (manage energy/EnMS), in this way allowing Behaviour changes (business integration) leading to a structural sustained behaviour.

Michele Preziosi, ENEA, focused on the Italian Information and Training Programme. The presented work focused on the evaluation of energy savings and analysis of drivers and barriers for industrial energy efficiency.

MAIN CONCLUSIONS

The following conclusion were drawn:

- In the industrial sector there is a lack of methodologies to quantify energy and non-energy savings/benefits related to behavioral-sensitive programs/actions; same issues in training and information programs.
- Behavioral drivers, at organizational and individual level, are significant for industrial energy efficiency. To be more efficient policy programs should also stimulate soft aspects.
- Context matters, since it underlines the need for more of regional, sector and firm specific studies on drivers (and barriers) prior to a public policy program design.
- Education and university collaboration are significant drivers for industrial EE in SME. Policy makers in Europe should stimulate national research programs on the topic.
- There is many policy instruments either targeted at SMEs or wider industry, categorized as financial support (64% of those gathered by LEAP4SME partners), information/advice (32%) and regulation (4%). There are however still significant barriers to SMEs in taking up support, such as a lack of resources, lack of energy/environmental culture, limited awareness of the support, and the financial benefits of energy efficiency not being significant enough for SMEs to act. Lack of resources, culture and limited awareness need to be addressed/studied also considering behavioral science.
- The energy manager is frequently the link of the technical levels with the management. The energy manager plays a prominent role in properly conveying and translating the message to the decision makers.

Detailed actions that policy makers/implementers could implement to better consider behavioral aspects/issues in energy efficiency policies for the industrial sector can be identified as follows:

- EE policy programs must have long terms perspectives and be designed so that they are easily translated into the local setting of the firm.
- Promotion of programs with a wide use of cost/effective monitoring & control systems.

- Promotion of multiple benefits in energy audits and energy investment evaluation to overcome financial and strategic barriers.
- Continuous improvement of databases associated to the monitoring of existing legal obligations or incentive mechanisms, trying to cover as much as possible behavior related dimensions (such as, for example, the effects of ISO 50001 certification or monitoring systems); if needed, these databases could be complemented with ad hoc surveys.
- When a legal obligation is set, training stakeholders, and cooperating with them for a correct implementation is of utmost importance. About EED art.8, in Italy in 2020 ENEA has organized or taken part to more than 25 events/seminars for an overall number of 5,000 practitioners, business associations representatives and auditors.
- Use taxonomy, Strategic based targets, sustainability reporting, Eco-design, etc. to support B2B and end consumer demands as a driver for behavioral change in companies. SMEs need a continuous context, like learning networks, local cooperation.
- Promote incentive programs tending to reach the decision makers in enterprises.
- Difficulty in monitoring the energy savings from ISO 50001 EnMS: there are examples of companies previously in the Swedish PFE-program that did not or considers to not continue with ISO 50001. These companies either tended to not integrate ISO 50001 in their business model or do not get request from their customers etc. They cannot justify the cost but may still have an internal management system in parallel to ISO 50001.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/event/behave-2021/>



3.3.2. LEAP4SME Workshop at EUSEW 2021, 11th October 2021

The workshop *Energy audits and energy efficiency: Focus on energy intensive SMEs in Europe* has been organised on 11 October 2021 as an extended programme session within the EU Sustainable Energy Week 2021. The workshop focused on the role of energy audits and energy efficiency policies in energy intensive-SMEs. Speakers from CINEA, national authorities, and three senior representatives of energy-intensive European business associations (chemical, foundry and copper industries) tackled the topic from different angles and provided suggestions for improving the policy making and the implementation cycle for energy-intensive SMEs. The online workshop was approximately attended by 62 people.

AGENDA OF THE MEETING

11 th October 2021	
12:00-12:10	Introduction + Energy Audits & Energy efficiency policies in SMEs Enrico Biele, Project Coordinator, LEAP4SME
12:10-12:20	Funding the green transition of companies Oronzo Daloso, Project Manager CINEA, European Commission
12:20-12:30	Energy audits and energy efficiency in SMEs: Experiences from the Chemical Industry Nicola Rega, Director of Energy, CEFIC, European Chemical Industry Council
12:30-12:40	Energy efficiency and the copper industry: Creating leverage for decarbonisation Diedert Debusscher, Clean Energy Transition Strategic Advisor, European Copper Institute - Copper Alliance
12:40-12:50	Energy rationalization in foundries: A comparison between European and Italian experiences Roberto Ariotti, President of the Executive Committee, CAEF, European Foundry Association
12:50-13:00	EED Article 8 implementation for energy intensive SMEs: A national case study Marcello Salvio, Head of Unit Energy Efficiency in the Economic Sectors, ENEA, Italian National Energy Agency
13:00-13:30	Final debate & Q&A

PROCEEDINGS OF THE MEETING

Enrico Biele, ENEA introduces the workshop topics and speakers and gives a brief overview of the LEAP4SME project.

The project activities highlighted the lack of energy data for SMEs, in terms of energy consumption and KPIs, which does not allow proper planning of dedicated energy policies for SMEs. Enrico Biele also presents the main recommendations deriving from the analysis of energy efficiency policies for SMEs and their barriers. Recommendations include the need to:

- ✓ Further evaluate a combined approach with a mix of different instruments
- ✓ Assess the effectiveness of focused obligations for SMEs to conduct energy audits •
- ✓ Simplify application processes, as well as support for SMEs during the application phase
- ✓ Develop sector specific policy instruments & assessment of tailor-made approaches at the intersection of firms size and specific aspects of energy/climate investment
- ✓ Raise awareness communication of existing policy instruments for SMEs
- ✓ Create linkages between audits and wider support programmes
- ✓ Strengthen standards for auditors and their outputs

The presentation closes with a preview of the project's next steps, which include the development of surveys targeted to both organization and SMEs and the collection of proposals, contributions and ideas through national and international observatories and trainings.

Oronzo Daliso, European Commission pointed out the current relevance of the topic of energy intensive SMEs as demonstrated by policy attention and confirmed by the scale of investment that has been put into energy efficiency, Green transition and climate change. Approximately EUR 550 billion (around 30 per cent of the Next Generation EU together with the Enhanced Multiannual Financial Framework) will be earmarked for climate objectives, and investments in energy efficiency, especially for industry and SMEs, are expected to be a key lever. Moreover, EE multiple benefits (in terms of productivity and operational gains) are expected to be a key multiplier of these investments. Daliso illustrates the EU funding landscape to support EE which is declined in to various programs depending on the main

object of the support: instruments that tackle direct investments (Cohesion Policy Funds, Recovery and Resilient Facility, etc), instruments to seek to leverage private investments for research and innovation (Horizon Europe and others), programs to address market barriers (LIFE Clean Energy Transition & climate Mitigation and Adaptation, LIFE circular Economy & Quality of Life) and support for technical assistance and advisory (ELENA Facility). Daloso also cited the EC “*Assessment and Communication of Relevant EU-funded Projects Supporting the Market Uptake of Energy Efficiency Measures in Industry and Services*” report in which the results of 41 projects aimed at increase the market uptake of cost-effective energy efficiency measures in industry and service sectors were analysed to assess whether the activities supported, such as training and capacity building programmes for relevant market stakeholders, definition of benchmarks, development of tools or sharing of best practices, continue to be an effective way to support the Clean Energy Transition of companies toward the achievement of EU Climate and Energy targets. These 41 projects have had a significant impact on the energy efficiency and energy audit market in Europe by addressing many of the main identified barriers such as:

- ✓ lack of financing, long pay-back time for some energy saving measures along with the lack of government regulations on mandatory energy audits for SMEs
- ✓ lack of information, practical experience and time resource
- ✓ The value of energy efficiency is poorly recognised and captured)

The final part of the speech is related to funding opportunities under LIFE Clean Energy 2021 related to energy efficiency and energy intensive SMEs.

Nicola Rega, CEFIC, European Chemical Industry Council briefly introduces European chemical industry which includes more than 5000 companies of which only 3% are large companies responsible for about 70% of sales. Chemical industry is a very diversified sector in terms of dimensions, energy consumption and intensity and CEFIC is investigating different options to provide support to its companies and to share know-how and best practices for EE. Over the past decade CEFIC participate to two SME-aimed projects, co-financed by EC: The Care + Project (2008-2011) and SPiCE Projcet (2013-2017). The Care + Project was aimed at develop, test and offer to SMEs proposals for an efficient use of energy and diffuse information about energy management systems advantages and impact on SMEs



performance. Main outputs of the projects have been a best practice manual and self-auditing tools. The SpiCE Project was mainly aimed at creating an online platform (one-stop shop for energy efficiency information), organizing workshops to exchange and discuss best practices, learn from larger companies and discuss with energy experts and on-site training.

Participation in these projects has been very useful for CEFIC, allowing it to learn several lessons, which Rega summarizes as follow:

- ✓ Usually there is a 10-20% energy efficiency improvement potential in many SMEs addressing energy audits for the first time.
- ✓ While the concept of Energy Efficiency is in principle very clear, its definition and measurement in practice is technically complex and often subject to specific case by case considerations, very often unsuitable to easy extrapolation.
- ✓ In chemical processes, replacing energy vectors could compromise the final chemical reaction and/or the characteristics of the final product.
- ✓ Time and qualified human resources have to be committed to address energy efficiency: a project is a result of careful study of a specific situation, with a system approach.
- ✓ In an energy efficiency improvement project definition, energy efficiency must be coupled with economic efficiency: this may imply limits to the extent of worthwhile actions for energy efficiency improvements.
- ✓ Once a project has been defined, its feasibility depends on competition for the use of limited financial resources and the necessary priority to “core business” projects.

And more specific for SMEs:

- ✓ Lack of knowledge
 - Investments in the chemical industry require rather precise technical competences
 - Difficult to find such knowledges in external consultants
 - Particularly with micro-enterprises, company activities often rotate around the founder’s life: no long-term vision beyond retirement •
- ✓ Administrative burdens

- Dealing with energy efficiency programmes requires diverting human resources
- ✓ Limited staff resources
 - Note: not all companies have an 'energy manager' in their organigramme
 - Especially in micro-enterprises, example of CEO 'factotum'
- ✓ Financial limitations
 - Balance sheets not robust enough for long-term investments
 - ROI in energy efficiency needs to be comparable with ROI in "core business": often difficult to reach in the absence of support measures

Diedert Debusscher, European Copper Institute - Copper Alliance presents the activities of the European Copper Institute, which supports its members in developing the market and contributing to sustainable development goals.

The European copper industry is committed to two paths: the first is the decarbonization of copper production and the second is the activation and support of substantial carbon reductions in downstream sectors such as industry, buildings, and transportation. Copper production industry has reduced its energy consumption per unit by 60% over the past decades by the implementation of innovative and more efficient production technologies and with the recovery of residual heat.

The biggest impact copper industry has in decarbonizing our economy is in the downstream sectors such as in industry, buildings and transport as copper is everywhere in the energy system thanks to its unique properties which make the metal a key material in the energy transition. Copper has a low contribution to carbon emissions but a high contribution to decarbonization through the CO₂ reduction downstream the value chain related to innovative copper intensive technologies (RES, electric vehicles, batteries, heat pumps, etc).

The European Copper Institute unless copper is not a SME intensive industry has a long history in actively promoting and supporting energy efficiency in industries. Debusscher illustrates the results of a survey conducted in 2021 to identify issues that SMEs are facing when implementing energy management systems and these results are aligned with the main results illustrated before by Daliso and Rega. Only 16% of companies has an EnMS in place and another 36% report a systematic approach to energy efficiency but this means that about

half of the companies are not implementing energy efficiency measures and there is clear room for improvement.

Results of the survey also show that the main barriers to EE are related to too long payback periods perceived and to low benefit cost ratios, and concerns regarding bureaucracies and resource constrains. SMEs need support both in finance and training and information and in particular, survey results show an information gap mainly related to case studies, best practices and methodologies.

ECI institutes to support SMEs and promote EE in industry includes an Application Note to implement EnMS in a simplified and pragmatic way tailored to the type and size of the SME, online helpdesk on the implementation of EM practices and more than 60 Application Notes lighter to read than technical guides and thought for a non-expert reader. Another important ECI campaign is related to electric motor replacement that could harvest an important contribution to EU target.

Debusscher outlines ECI's position on EED emphasizing how it is necessary to focus on those economic sectors and application domains with vast untapped cost-effective EE improvement such as SMEs, heating and cooling systems and at system level, such as indoor electrical installations.

ECI believes it is necessary to improve the quality of energy audits and the level of adoption of cost-effective recommendations from EAs without making such implementation mandatory because in its experience voluntary schemes in industry result in a higher willingness to invest and also on a more continuous time horizon. ECI welcomes the strength and provisions also on promoting EnMS but emphasizes the need for support, especially for SMEs, in the implementation of these, and simplified and pragmatic approaches tailored to the type and size of the company should be considered.

Roberto Ariotti, CAEF, European Foundry Association introduces the main activities of the European Foundry Association which includes about 6000 companies, mainly SMEs, delivering to the market about 17 million tons of castings which are the structural components of several machine and products form vehicles to wind turbines. After a brief overview of the European situation Ariotti illustrates the peculiarities of the Italian foundry industry. In Italy

energy audits are mandatory also for energy-intensive SMEs and due to obligation voluntary certifications are not widespread. The Italian association of foundries (ASSOFOND) carries out and published a work of data collection and data processing to identify energy benchmarks and areas in which efficiency interventions are more effective. Ariotti concludes his speech by emphasizing the importance of energy savings also because of its related effects by estimating that each euro of energy savings corresponds to a benefit to the company that is about 2.5 times the value of energy savings.

Marcello Salvio, ENEA, provides details on the Italian situation regarding the implementation of Article 8. In Italy, as anticipated earlier by other speakers, the EAs obligation is also in place for energy-intensive companies, including SMEs. Energy-intensive companies are the ones with an annual electrical energy consumption greater than 1 GWh and applying for tax relief on part of the purchased energy. Salvio then illustrates the collected data related to the EAs submitted by energy-intensive SMEs at the 2019 deadline: about 3,000 audits submitted by more than 2,000 companies with a total energy consumption of 8,8 Mtoe. The analysis includes energy efficiency measures implemented and identifies in the EAs with the quantification of savings. Thus, Salvio emphasizes the huge potential of the database of mandatory energy audits, which allows for in-depth sectoral analyses, the elaboration of first- and second-level KPIs, and techno-economic analyses of energy efficiency measures.

CONCLUSIONS AND RECOMMENDATIONS

Several key conclusions and recommendations can be drawn from the discussion between the different speakers and the audience:

- Lack of information, financial limitations and administrative burdens are the main barriers to the spread of energy efficiency culture in SMEs.
- Good practice guides, tools and training courses can help spread this culture if tailored to specific sectors and sizes of businesses. In addition, each country has its own specificities and thus European directives need to be flexible enough to be better applied to individual member states economies.
- Stimulating and supporting energy monitoring in SMEs level maybe also developing supportive program for energy measurements as demonstrated by some of the case studies presented.

- The participation of trade associations in this transition process is crucial to effectively reach out to SMEs and gather their specific needs and overcome barriers.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/event/energy-audits-and-energy-efficiency-focus-on-energy-intensive-smes-in-europe/>

3.3.3. LEAP4SME Workshop at the Race to Zero Campaign, 24th February 2022

The workshop *Europe, the race is on. How will your sector reach the clean technology breakthroughs?* has been organised on 24th February 2022 as part of the Race to Zero global campaign. The workshop brought together both SMEs and larger businesses, with expert policy advisors, researchers and NGO officials, to discuss opportunities to achieve breakthroughs in the innovation and deployment of clean technology across sectors within Europe, as well as remaining barriers.

The event started with an insight into the outcomes of COP26 and priorities for the UK Presidency year, followed by an introduction to the Breakthrough Agenda and how both countries and businesses can come together to accelerate the clean technology transition through the Glasgow Breakthroughs and 2030 Breakthroughs respectively. Barriers faced by businesses and opportunities within sectors were discussed.

Moderated by: Enrico Biele (LEAP4SME)

Rapporteur: Niroshini Bodinagoda, Estefania Solar (Energy Saving Trust)

Participants: about 15 representatives of National Energy Agencies (Italy and Malta), DG-Energy, We Mean Business Coalition, CNA Italy, Malta Enterprise, ENDEF, NGOs and private businesses.

PROCEEDINGS OF THE MEETING

Two main topics have been discussed in the session: Finance and Policy. The discussion can be summarised as follows:



- The UK Business Climate Hub is a collaboration between the UK Government, businesses and business groups across the UK, which also includes incentives to SMEs. Big corporates / big buyers work with SMES via their supply chain and have taken staggered approach. Namely, they look for hotspots in their supply chain, which have the higher potential in terms of transitioning to net zero. Lack of SMEs energy-related data is a key barrier since corporates need knowledge to help the energy transition of SMEs involved in their supply chain.
- Access to finance is a barrier. SMEs commitment for energy transition is needed and the implementation of this commitment takes time. It is time that SMEs would shift away from their core business. For this reason, SMEs start considering decarbonisation/low carbon transition during critical times, such as rising energy bills, business expansion, etc. SMEs need time to learn how to plan their low-carbon transition and what to do to access finance.
- To encourage SMEs, there are local and regional support schemes, which are better as they are closer to the level where SMEs work. It is also easier for companies to obtain information from local and regional governments, especially if SMEs are already engaged with this level of government. If you are small, you are more likely to be in contact with the chamber of commerce, etc., as opposed to larger companies that have dealings with the national government.
- In general access to finance is very difficult and even more so in relations to low carbon transition. Trying to put SMEs in touch with financial providers e.g., banks would help them to approach finance providers and to streamline the financing process.
- Support for SMEs through funding may not be effective despite the availability of resources due to lack of skills, other priorities, time constraints, etc. More assistance is needed to help address such barriers to accessing finance.
- DG ENER sought to address these key issues by conducting research with a selection of SMEs focusing on six pre-identified barriers. The main barrier was the difficulty of responding to business needs on the one hand and taking decarbonisation actions on the other. Few SMEs have a business case for decarbonisation. In some cases, the problem is a lack of knowledge on how to put together such a business case, in others it is the time to do so. There is also a lack of understanding of the financial and wider

benefits that decarbonisation can bring, such as the fact that such a business case can actually help reduce operating costs. Access to finance was not the main obstacle highlighted, but lack of knowledge and time.

- Data are needed for financial/incentive scheme application but this type of reporting is resource intensive for SMEs, which do not have teams dedicated to time consuming activity such as data collection.
- SMEs do not have work teams dedicated to monitoring, recommending and implementing technical improvements.
- Similarly, the energy audit process requires time and data. Again, there is a lack of time and expertise to undertake audits and then implement recommendations, although some SMEs act on audit recommendations when it is possible to do so in their day-to-day activities.

MAIN CONCLUSIONS

The following conclusions were drawn from the event:

- Lack of interest is not an issue, since SMEs are interested to engage.
- Financial barriers cannot be addressed alone.
- Business activities take precedence over reduction of consumption and emissions.
- There is a lack of knowledge about the benefits of transition to a low carbon business model.
- Lack of skills to put such business case together is also observed.
- Data requirements needed for financial applications are too time and resource intensive for SMEs.
- SMEs often do not have the competences and staff to perform audits or investigate the technical potential changes.
- Better links between SMEs and local and provincial governments are needed.
- Along with financial support packages, SMES need flexible instruments and handholding to help them address the other barriers identified above.

LINKS TO EVENT INFORMATION

<https://leap4sme.eu/newsitem/spring-newsletter-2022/>

<https://racetozero.unfccc.int/system/race-to-zero/>



4. Conclusions and main recommendations

This report describes national and international observatories and events organised under the LEAP4SME project. These meetings, outlined in terms of participants and organisational mode, allowed to discuss key topics and to collect key recommendations from a wide range of stakeholders.

The project partners organised 30 national observatories, involving more than 750 participants through different type of meetings: face-to-face, online or hybrid meetings or interviews. Public meetings and bilateral interviews have been held in the period May 2022 - June 2023. Two international observatories have been also organised in Rome (September 2022) and Brussels (July 2023), where relevant stakeholders at EU level have been brought together to be updated on project findings and to work together for an effective exploitation of project results. In addition, LEAP4SME partners actively participated in other international events (such as Behave conference and EUSEW week), organising dedicated sessions and workshops.

Figure 27 summarises the recommendations collected in the nine countries. On the left, the recommendations collected by policy makers and funding bodies are shown while on the right those collected by SMEs and business associations. Although the recommendations are substantially shared by the two groups, the different stakeholders give them different weight. Policy makers and funding bodies believe it is crucial to tailor support to SMEs and to improve the policy framework. SMEs and business associations consider that addressing SMEs financial constraints and working on awareness and taking into account the complexity of the SMEs internal decision-making processes are fundamental points. Clearly, these are complementary aspects of the same problem.

From Policy Makers and Funding Bodies

From SMEs and Business Associations



Figure 27 – Key recommendations collected from LEAP4SME national observatories

As shown in Figure 27, five key recommendations arise from all national observatories:

1. **Addressing financial constraints:** *SMEs often have limited financial and human resources to engage in energy efficiency interventions or carry out audits that are not required by law.*
 - ✓ Tailored soft loan programs could be helpful to ensure better access to finance.
 - ✓ Risk sharing facilities among different funding bodies - such as guarantee and co-lending schemes - could help in sustaining energy efficiency investments.
 - ✓ Vouchers can be used to support and motivate smaller enterprises to develop energy audits and, later on, introduce energy performance improvement actions (EPIAs).
 - ✓ Networks of firms can alleviate the lack of resources and help in better exploiting energy efficiency opportunities, both in terms of technologies and access to incentives.

- ✓ Better information and guidance at national and local level are needed to better exploit existing European funding resources.
 - ✓ A starting point to engage with business could be focusing on support measures addressing commercial benefits, such as installing solar PVs to reduce energy bills and help payback the loans quickly. It would also be beneficial to extend the payback period on loans.
2. **Tailoring:** *The disparity in size and core business of SMEs, and the different incidence of energy and resources costs, requires specific support measures and energy audit approaches.*

Tailoring by sector

- ✓ Energy efficiency mechanisms should be based on sectoral approaches more than on general programmes.

Tailoring by size

- ✓ Micro SMEs could provide high potential savings but are more difficult to engage: simpler schemes could be applied to smaller businesses.

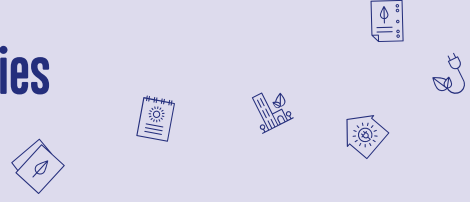
Tailoring the support and regulation framework

- ✓ Including energy audits as an eligible cost in support measures.
 - ✓ Including EnMS in the requirements for private contracts or public tenders.
 - ✓ Redesigning existing energy efficiency subsidies according to a future taxonomy regulation.
3. **Policy framework:** *Energy efficiency policies for SMEs must be based on a permanent, stable, and predictable regulatory framework.*
- ✓ In order for SMEs to adopt energy efficiency measures, government bodies need to establish an enabling framework aimed at providing technical assistance and targeted information. Indeed, monitoring consumption is essential for a more effective planning of interventions.

- ✓ After the identification of energy efficiency measures in an audit, support is needed for their implementation.
 - ✓ Existing subsidies could be redesigned giving support to companies classified as green, according to a future taxonomy regulation.
 - ✓ Loans are key to ensuring better access to finance, financing new investments, and business transfers for SMEs. Guarantee co-lending schemes for SMEs (risk sharing facility and co-lending among different funding bodies) could be another effective solution.
4. **Monitoring:** *Energy consumption is rarely monitored by SMEs and monitoring systems are scarce*
- ✓ Monitoring should be tailored to the energy and resources profile of the business sector and done step by step, starting with minimal requirements.
 - ✓ Energy audits and EnMS (also in simplified versions) should be promoted.
 - ✓ Supporting the adoption of EnMS could be effective in introducing continuous monitoring and to increase the implementation rate of EPIAs.
5. **Raising awareness:** *SMEs' awareness on energy consumption, energy efficiency options and support mechanisms is a necessary precondition to plan and implement effective EPIAs.*
- ✓ The main challenge to increase the energy efficiency in SMEs is to promote a culture of energy efficiency, hence continuous training, formation and information is necessary.
 - ✓ Policies should include information campaigns to make SMEs aware of which support measures are available as well as to constantly re-engage them.
 - ✓ Special attention should be paid to inform and train SMEs, giving a clear idea of costs and benefits associated to energy audits and the implementation of energy efficiency measures.

Annex – Factsheets on National Observatories





Details on national observatories

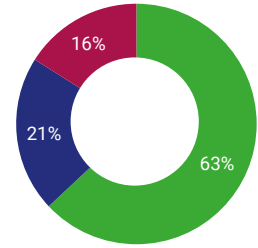
Meetings/interviews organised by
The Austrian Energy Agency (AEA)

Date	Type	Mode	Participants/Interviewees
June 2022 - February 2023	12 Interviews	Online	13
17 January 2023	Interview	Online	2
14 February 2023	Interview	Live	1
12 May 2023	Interview	Online	2
17 May 2023	Interview	Online	1

Total number of participants/interviewees: 19

Type of participants/interviewees

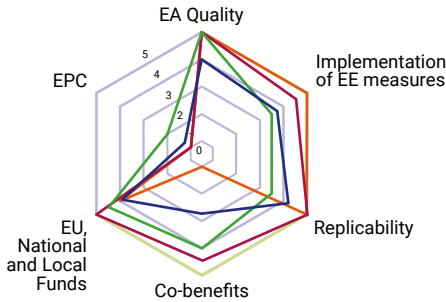
- Policy makers and funding bodies
- Business associations
- Academia and research



Background from policy assessment and surveys

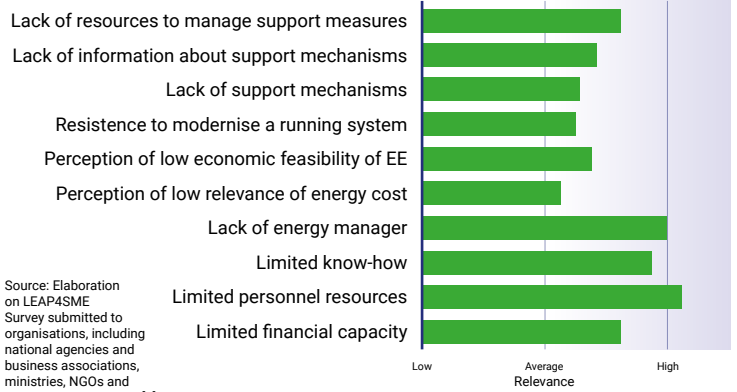
Evaluation of good practices in energy audit supporting programs in Austria

- Climate Alliance Austria - climate alliance programme for companies
- SME Energy Efficiency Voucher
- Klimaaktiv Building and Renovating
- Federal support programmes
- Mean



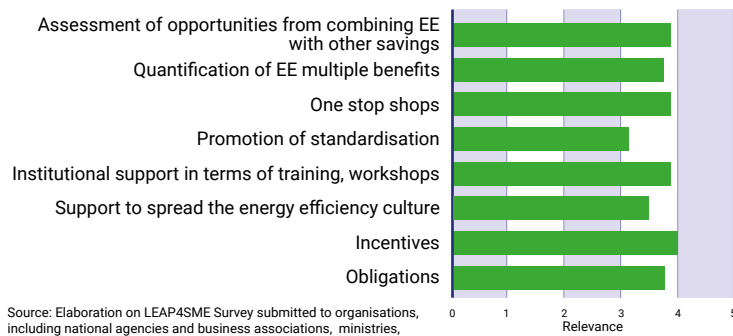
Source: Elaboration on [1]. Mean values are calculated from 21 good practices analysed in the 9 LEAP4SME countries.

Energy Audits: Most relevant barriers for SMEs



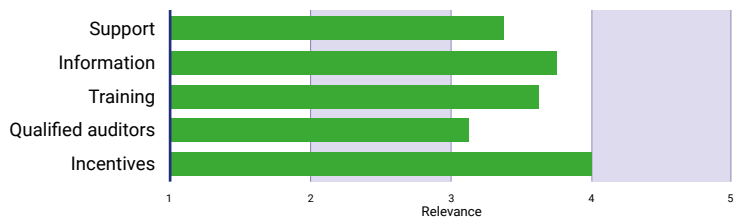
Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Measures to increase the implementation of energy audit recommendations for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Energy Audits: Most relevant needs for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Observatories' main features

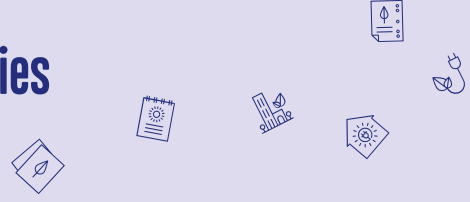
Main topics

- The observatories were carried out as bilateral interviews with relevant stakeholders based on an interview guideline
- The focus of the interviews was to discuss the barriers and challenges identified in the H2020 LEAP4SME project

Organisational tips and challenges

- Difficulties in engaging small companies
- Involvement of business associations could help in promoting the event and disseminating its results
- Energy agencies can stimulate the exchange between consultants by organising regular network meetings

[1] LEAP4SME Deliverable D3.3 Collection of good practices
[2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Details on national observatories

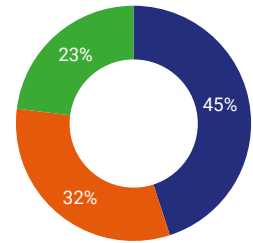
Meetings organised by
Energy Institute Hrvoje Požar (EIHP)

Date	Type	Mode	Participants
2nd June 2022	Meeting	Live	4
20th June 2022	Meeting	Online	9
3rd November 2022	Meeting	Live	4
29th March 2023	Meeting	Live	5

Total number of participants: **22**

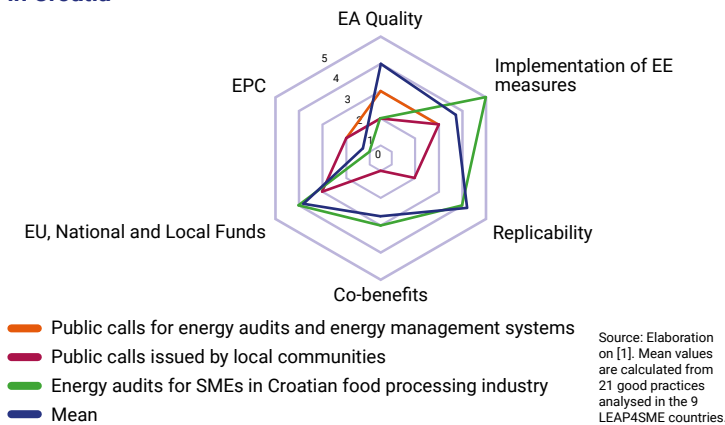
Type of participants

- Business
- Energy agencies
- Policy makers and funding bodies

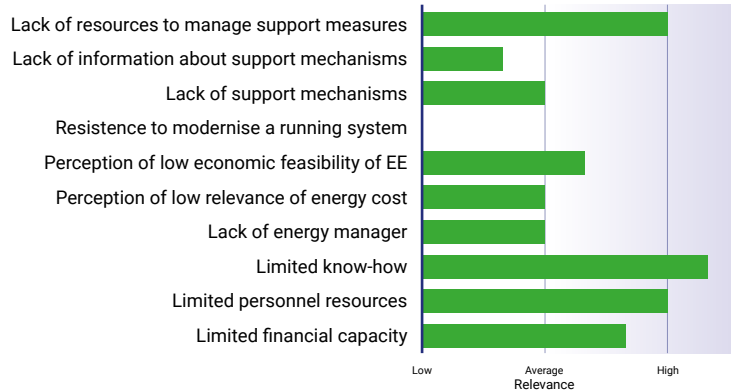


Background from policy assessment and surveys

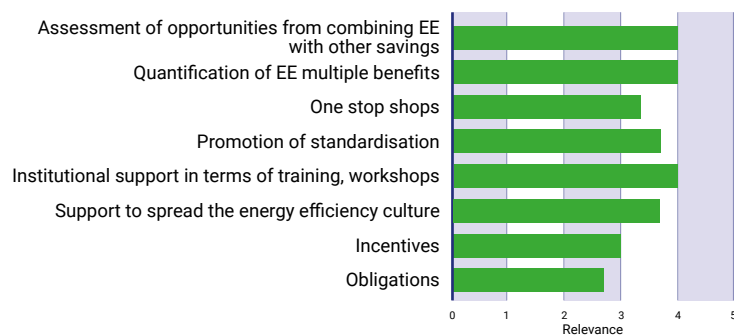
Evaluation of good practices in energy audit supporting programs in Croatia



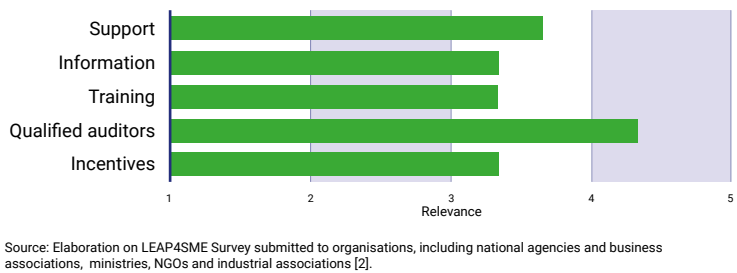
Energy Audits: Most relevant barriers for SMEs



Measures to increase the implementation of energy audit recommendations for SMEs



Energy Audits: Most relevant needs for SMEs



Observatories' main features

Main topics

- Energy audits policy and support framework
- Energy auditor certification scheme
- How to structure financing schemes for energy efficiency in SMEs

Organisational tips and challenges

- Defining the most competent counterparts for discussion within institutions (ministries)
- Adjusting the programme goals with institutional activities

[1] LEAP4SME Deliverable D3.3 Collection of good practices
[2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

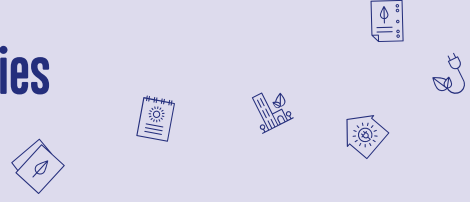
From SMEs and business associations

- **Awareness:** Potential specialised funding – allocations, calls etc. – for energy efficiency in SMEs is available, but the submission of projects is lacking.
- **Audit quality:** The principles of thorough energy audits, combined with economic analyses, potentials and corresponding financing possibilities could be a significant incentive for SMEs.
- **Financial constraints:** Vouchers can be used to support and motivate smaller enterprises to develop energy audits.
- **Consumption threshold:** The relevance of energy on total expenditure affects the motivation to implement energy audits. Policies could be based on energy expenditure thresholds to support energy audits in SMEs.
- **Indicators:** Calls for funding should require energy audits, including the estimation of ex ante and ex post indicators showing the energy savings associated with the interventions to be financed. Such indicators can be useful when applying to projects related to the circular economy since they highlight indirect energy savings. A good practice is for non-energy efficiency specific calls to give additional points for energy efficiency.

Shared with other stakeholders (policy makers, funding bodies, academics etc)

- **Lack of skills:** There is a lack of staff to support energy efficiency and audit schemes among policy makers.
- **Tailoring:** Application parameters for SME calls are difficult to set. In particular two options could be applied: calls for typified projects with defined parameters or open calls without fixed parameters. In the first option, it is easier to evaluate results, but potentially successful projects could be excluded. In the second option, interesting applications may appear, but evaluation of the objectives and results could be more complicated.
- **Monitoring:** Energy efficiency funding schemes for SMEs should include the quantification of potential savings by requiring an energy audit or the compliance with ISO standards.





Details on national observatories

Meetings organised by

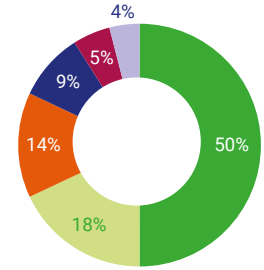
The Center For Renewable Energy Sources (CRES)

Date	Type	Mode	Participants
12th July 2022	Meeting	Hybrid	12
26th June 2023	Meeting	Live	10

Total number of participants: **22**

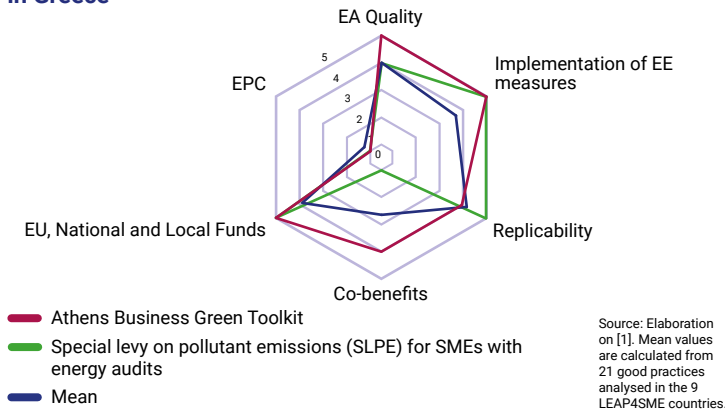
Type of participants

- Policy makers and funding bodies
- ESCOs and Energy Experts
- Energy agencies
- Business associations
- Academia and research
- Business

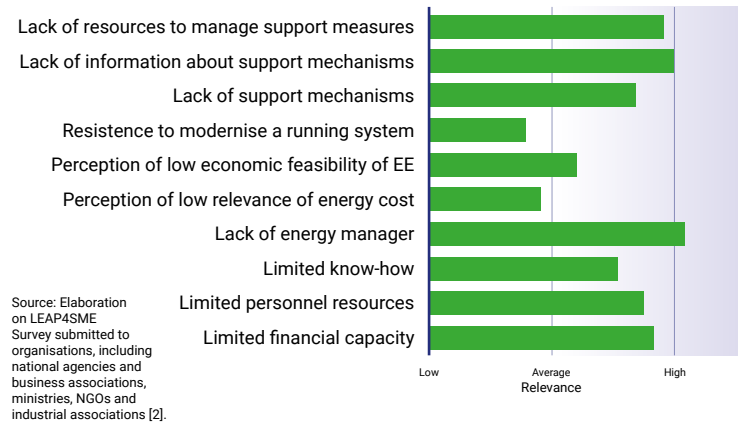


Background from policy assessment and surveys

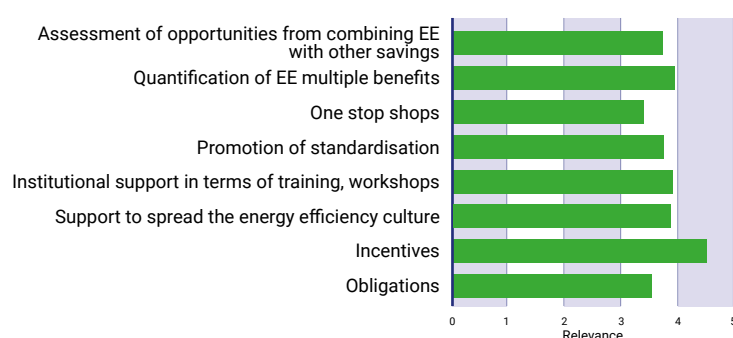
Evaluation of good practices in energy audit supporting programs in Greece



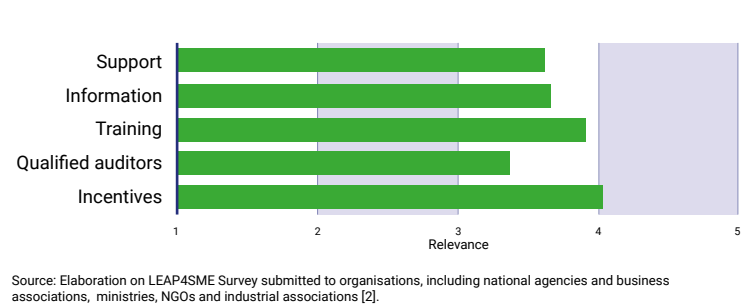
Energy Audits: Most relevant barriers for SMEs



Measures to increase the implementation of energy audit recommendations for SMEs



Energy Audits: Most relevant needs for SMEs



Observatories' main features

Main topics

- Energy audit programs for SMEs
- Barriers for SMEs
- Energy inspection vs Energy audit

Organisational tips and challenges

- Difficulty for in-person participation during the working hours for SMEs
- Involvement of business association and municipalities could help in promoting the event and disseminating its results

[1] LEAP4SME Deliverable D3.3 Collection of good practices
 [2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

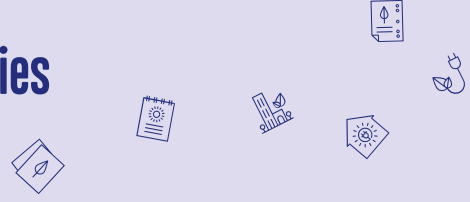
From SMEs and business associations

- **Consumption threshold:** Given the relevant rise of energy costs in recent years, enterprises have chosen many different ways to be able to compensate for this (change in the energy mix, installation of RES, energy communities). The higher costs increase the motivation of firms in developing energy audits.
- **Policy framework:** In order for SMEs to adopt energy efficiency measures, government bodies need to establish an enabling framework aimed at providing technical assistance and targeted information. Indeed, monitoring consumption is essential for a more effective planning of interventions.
- **Financial constraints:** Better adaptation of European programs to the Greek reality would be useful, in terms of better information for interested parties and higher economic resources to support SMEs' own contribution.

Shared with other stakeholders (policy makers, funding bodies, academics, etc)

- **Tailoring:** Creation of specialised programs specifically designed for micro and small enterprises that aims, respectively, at the energy upgrade of the building infrastructure and the renewal of mechanical equipment with the withdrawal of high consumption / low efficiency machines.
- **Awareness:** Enterprises are not aware of benefits associated with energy efficiency.
- **Skills:** Lack of technical expertise in energy audits actually limits the effectiveness of existing programs.
- **Standardisation:** creation of a customer credit rating scale with indicators, also accepted by banks, in order to facilitate the funding process.





Details on national observatories

Meetings organised by

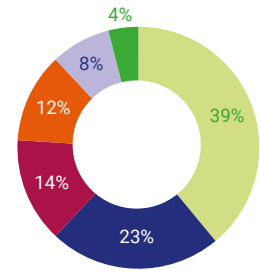
The Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA)

Date	Type	Mode	Participants
17th May 2022	Meeting	Hybrid	23
24th May 2022	Meeting	Hybrid	85
14th June 2022	Meeting	Hybrid	55
24th November 2022	Meeting	Hybrid	70
26th January 2023	Meeting	Hybrid	130

Total number of participants: **363**

Type of participants

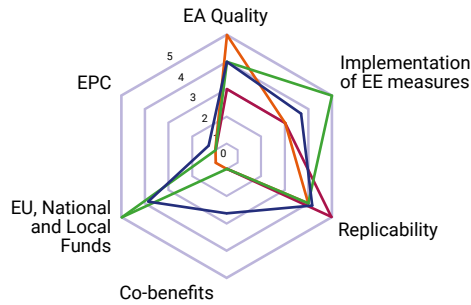
- Energy experts
- Business
- Academia and research
- Energy agencies
- Business associations
- Policy makers and funding bodies



Background from policy assessment and surveys

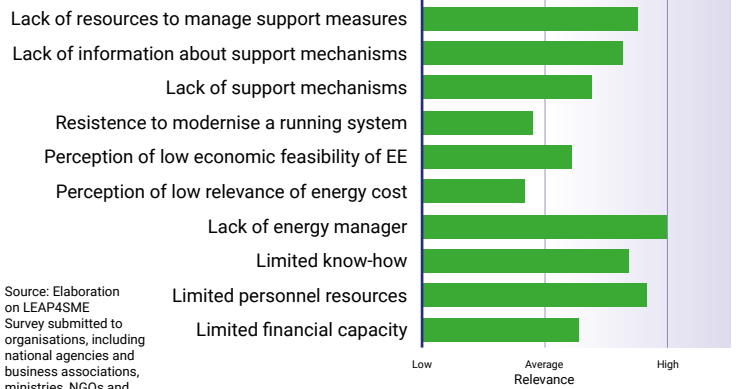
Evaluation of good practices in energy audit supporting programs in Italy

- Regional programmes for energy efficiency/energy audits
- Energy Intensive Industry programme
- TREND - Technology and Innovation for Energy Saving and Energy Efficiency
- Mean



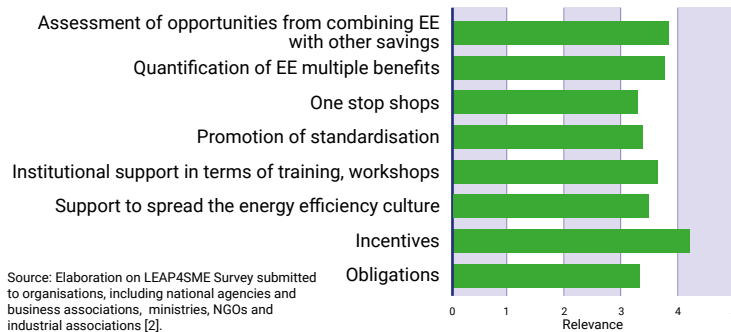
Source: Elaboration on [1]. Mean values are calculated from 21 good practices analysed in the 9 LEAP4SME countries.

Energy Audits: Most relevant barriers for SMEs



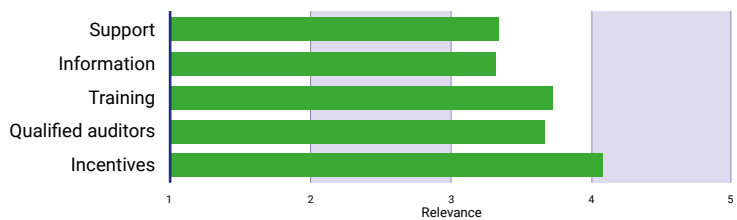
Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Measures to increase the implementation of energy audit recommendations for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Energy Audits: Most relevant needs for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Observatories' main features

Main topics

- National and regional support measures
- Barriers and drivers for energy efficiency and energy audits
- Self assessment tools for energy consumption of SMEs

Organisational tips and challenges

- Difficulties in engaging SMEs
- Risk of low in-person participation when the event is hybrid
- Importance of involving business associations in promoting the event and disseminating its results
- A local scale approach with the involvement of key stakeholders (local entities, industrial districts, etc) fosters participation and diffusion towards companies

[1] LEAP4SME Deliverable D3.3 Collection of good practices
 [2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

From policy makers and funding bodies

- **Monitoring:** Improving firms' awareness of their energy consumption, also by financially supporting energy monitoring, is a necessary precondition to plan and implement effective energy performance improvement actions (EPIAs). Energy audits can be considered a key tool, and energy and environmental management systems (also in a simplified version) are also very useful tools.
- **Decision making:** In order to further develop energy efficiency in SMEs not only economic barriers should be considered (for example financing energy audit costs) but also cultural barriers. There is still a lack of confidence on the external energy service companies and auditors, and in the EPIAs they propose, that must be faced.
- **Financial constraints:** Networks of firms are relatively spread among SMEs, since they alleviate the lack of resources which is generally common in these type of firms. Networks could help to better exploit existing energy efficiency opportunities, both at the technological and support measure levels.
- **Tailoring:** The mechanisms for supporting energy efficiency in SMEs should be based on sectoral approaches (with a focus on manufacturing) more than on general programmes.
- **Awareness:** The main challenge in increasing energy efficiency in SMEs is the promotion of a culture of energy efficiency, hence continuous training and access to information is necessary.

Shared with other stakeholders (SMEs and business associations)

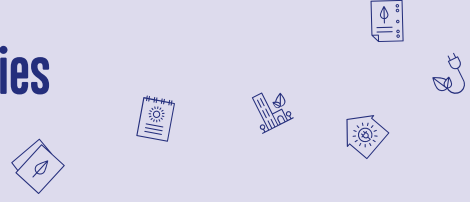
- **Policy framework:** Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.
- **Simplification:** Easing administrative burdens is a key condition to improve the access to existing incentives from firms interested in investing in energy efficiency. Simplification of procedures is crucial to the effective engagement of SMEs.
- **Energy efficiency support:** The incentives are related to the consumption of energy, instead of the quality of the energy consumption. The incentives (including tax reliefs) should be based on the individual case, in order to fix specific energy saving objectives for each firm.



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 893924.

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Details on national observatories

Meetings organised by

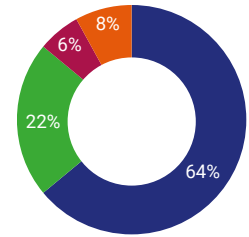
The Energy & Water Agency (EWA)

Date	Type	Mode	Participants
23rd June 2022	Meeting	Live	23
24th November 2022	Meeting	Live	27

Total number of participants: **50**

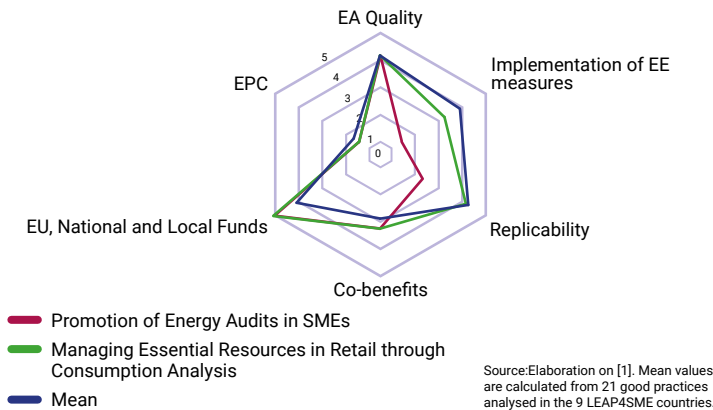
Type of participants

- Business
- Policy makers and funding bodies
- Education and Public administration
- Energy agencies

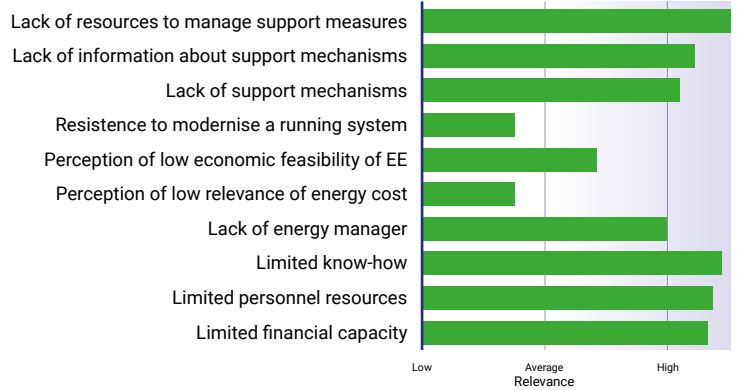


Background from policy assessment and surveys

Evaluation of good practices in energy audit supporting programs in Malta

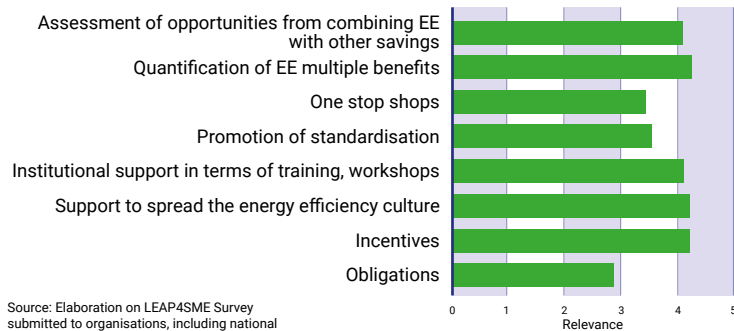


Energy Audits: Most relevant barriers for SMEs

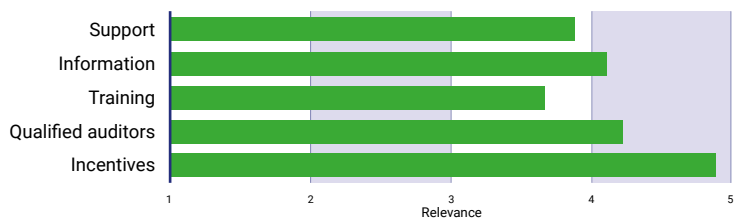


Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Measures to increase the implementation of energy audit recommendations for SMEs



Energy Audits: Most relevant needs for SMEs



Observatories' main features

Main topics

- Available schemes for SMEs to implement energy efficiency measures and energy audits
- Role of energy and water consumption in SMEs' priorities
- Barriers and drivers for energy efficiency investments

Organisational tips and challenges

- Involve business associations to reach out to SMEs
- Keep in mind the typical working hours of SMEs
- 'Time is money' – difficulties in getting SMEs attending the event

[1] LEAP4SME Deliverable D3.3 Collection of good practices
 [2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

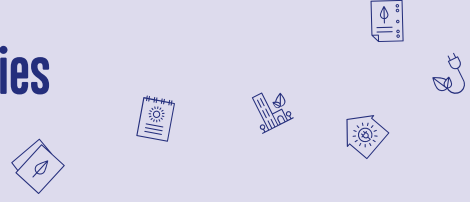
From policy makers and funding bodies

- **Guarantee schemes:** Also including loans, these are key to ensuring better access to finance, financing new investments and business transfers for SMEs. Guarantee co-lending schemes for SMEs (risk sharing facility and co-lending among different funding bodies) could be another effective solution.
- **Decision making:** Businesses that are not working on sustainability could see a significant impact on their competitiveness. It is recommended to not only support SMEs financially, but throughout their decision-making process so they can make this leap towards sustainability.
- **Digitalisation:** Investing in digitalisation could play a key role in optimising the use of different resources, including energy, human and economic resources, and in helping SMEs to face their general lack of resources.
- **Tailoring:** Ideally, financial support is tailored to specific categories of SMEs while maintaining some flexibility particularly in terms of funding so as not to limit SMEs operations.

Shared with other stakeholders (SMEs and business associations)

- **One-stop-shop:** SMEs would benefit from having a one-stop-shop which can guide them through the available financing schemes and assist them through the application process of such schemes.
- **Lack of resources:** SMEs are not willing to make investments with a Return on Investment (ROI) greater than three years. Moreover, energy efficiency investments could be perceived as too complex and SMEs think that applying for schemes and loans may adversely affect their cashflow due to timeliness issues to receive the desired grant.
- **Awareness:** There are various schemes available for SMEs, some of which SMEs may not be aware of. It was recommended to include information on possible financing schemes in the energy audit report.





Details on national observatories

Meetings organised by

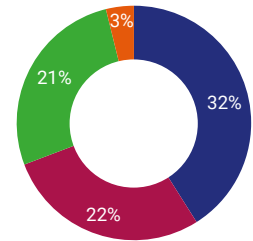
Krajowa Agencja Poszanowania Energii (KAPE)

Date	Type	Mode	Participants
26th May 2022	Meeting	Live	23
12th December 2022	Meeting	Online	48

Total number of participants: 71

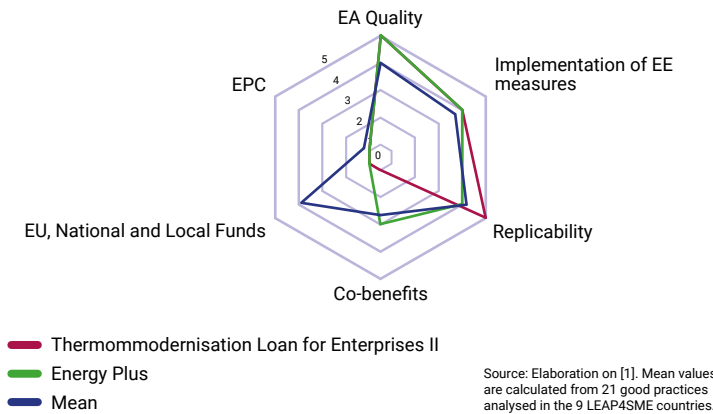
Type of participants

- Business
- Academia and research
- Policy makers and funding bodies
- Energy agencies

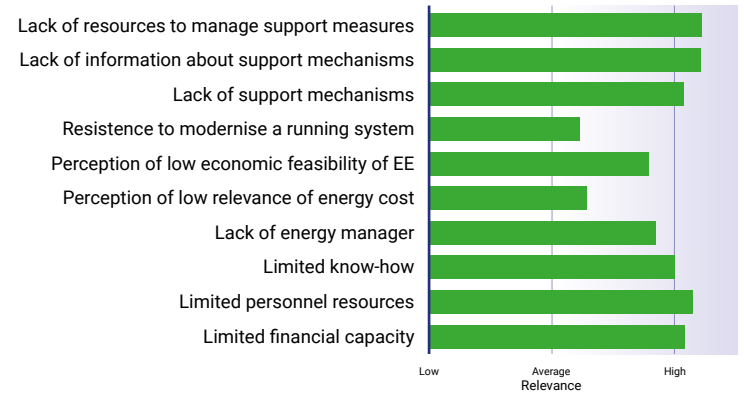


Background from policy assessment and surveys

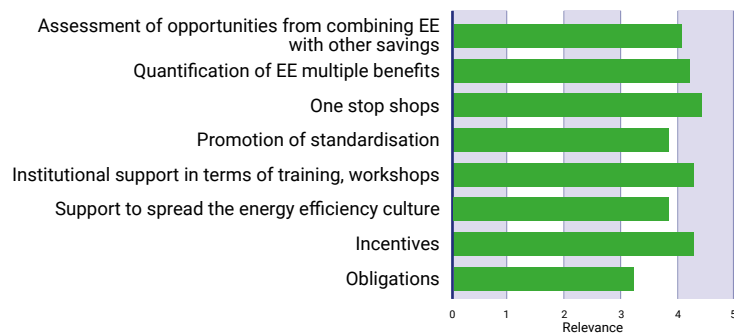
Evaluation of good practices in energy audit supporting programs in Poland



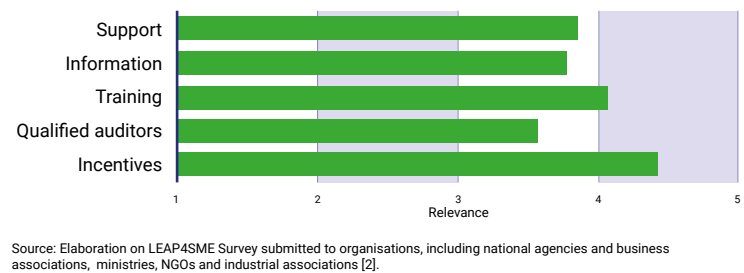
Energy Audits: Most relevant barriers for SMEs



Measures to increase the implementation of energy audit recommendations for SMEs



Energy Audits: Most relevant needs for SMEs



Observatories' main features

Main topics

- Support Measures for Energy Audits and Energy Efficiency in SMEs
- Energy market and costs
- Barriers for SMEs

Organisational tips and challenges

- Difficulties in engaging SMEs
- Involvement of business association could help in promoting the event and disseminating its results
- Low in-person participation when the event is hybrid

[1] LEAP4SME Deliverable D3.3 Collection of good practices
 [2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

From SMEs and business associations

- **Tailoring:** The energy efficiency in SMEs mechanisms should be based on sectoral approaches (with a focus on manufacturing) more than on general programmes.
- **Awareness:** The main challenge to increase the energy efficiency in the SMEs is to promote a culture of energy efficiency, hence continuous training, formation and information is necessary. Energy audits can be considered a key step in increasing the awareness of energy efficiency.
- **Decision making:** There is still a lack of confidence on the external ESCOs and auditors, and in the EPCs that must be faced.
- **Indicators:** Benchmark and indicators are necessary as reference, but they should be not included as the only foundation of the mechanisms.

Shared with other stakeholders (policy makers, funding bodies, academics etc)

- **Simplification:** Simplifying procedures is crucial for the effective engagement of SMEs.
- **Energy Management System:** Monitoring must be the first part of an energy management plan of every SME. Energy management systems, also in a simplified version, are very useful tools to promote the energy efficiency in SMEs.
- **Policy framework:** Energy efficiency policies must be based on a permanent, stable, and predictable regulatory framework.





Details on national observatories

Meetings organised by

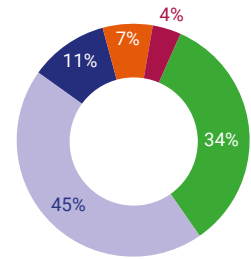
Agência para a Energia (ADENE)

Date	Type	Mode	Participants
1st June 2022	Meeting	Online	15
10th October 2023	Meeting	Online	15
28th February 2023	Meeting	Online	21

Total number of participants: **51**

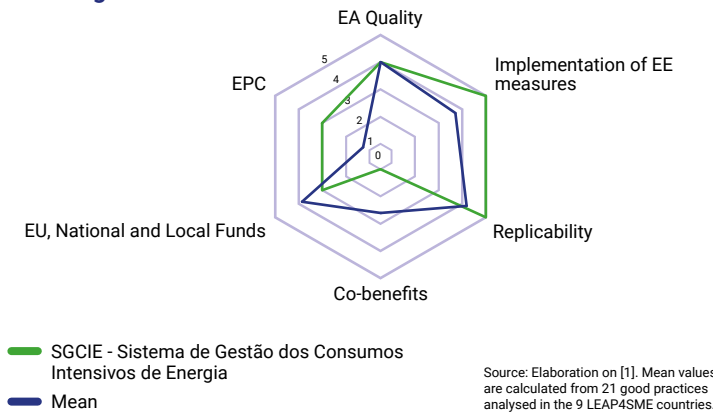
Type of participants

- Business
- Business associations
- Policy makers and funding bodies
- Energy agencies
- Academia and research

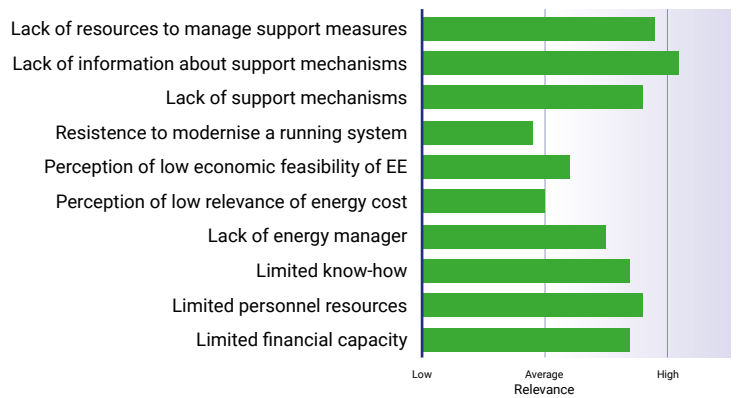


Background from policy assessment and surveys

Evaluation of good practices in energy audit supporting programs in Portugal

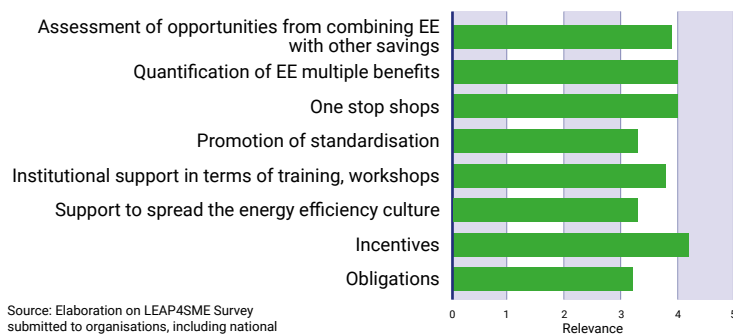


Energy Audits: Most relevant barriers for SMEs



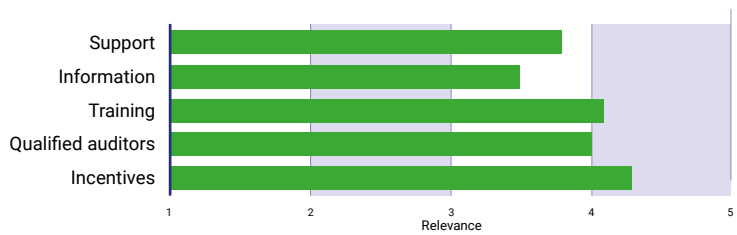
Source: elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2]

Measures to increase the implementation of energy audit recommendations for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Energy Audits: Most relevant needs for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Observatories' main features

Main topics

- Non-energy benefits KPIs
- Best practices related to energy efficiency and non-energy benefits
- Resource audit

Organisational tips and challenges

- A group of about 20 entities agreed to be contacted on a regular basis for meetings' purposes, so the range of stakeholders engaged was not that high.
- Targeted direct invitations may be more effective than general invitations or social media posting.
- Online meetings seem to work very well with smaller groups of participants.

[1] LEAP4SME Deliverable D3.3 Collection of good practices
 [2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

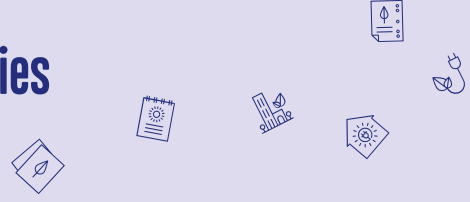
From SMEs and business associations

- **Tailoring:** The disparity in size and core business of SMEs, and the differences in energy and resource costs, requires specific support measures and energy audit approaches.
- **Financial constraints:** SMEs often have limited financial and human resources to engage in energy efficiency interventions or carry out audits that are not required by law.
- **Resource audit:** Energy, water, and materials are three dimensions with direct impact in business' costs. A comprehensive assessment of resource efficiency, which goes beyond the energy dimension, is interesting and useful for companies. Resource audits could be introduced, having well-defined objectives and targets, and they can be used as leverage to access financing schemes and obtain additional support.
- **Skills:** Business associations and SMEs experience a lack of qualified auditors that can act over the energy, water, and materials dimension at the same time. So, a qualifying framework is also necessary. Auditors must be trained, so that they can assure compliance with the technical requirements that energy and resource audit needs.
- **Monitoring:** The importance of measuring/collecting the adequate information on energy and resource consumption, as well as the basic indicators, is recognized. Indeed, it allows the better planning of energy efficiency interventions. Monitoring should be tailored on the energy and resources profile of the business sector and done step by step, starting with minimal requirements.
- **Decision making:** Systems like “smart meters” are more likely to be widely accepted to collect data. It is good practice to present the work to be developed to the top management, before starting the data collection process.

Shared with other stakeholders (policy makers, funding bodies, academics etc)

- **Indicators:** Non-energy benefits KPIs can help with the evaluation of energy efficiency incentive requests.
- **Energy efficiency support:** After the identification of energy efficiency measures in an audit, support is needed for their implementation.
- **Digitalisation** programs and energy efficiency policies could be usefully interconnected.





Details on national observatories

Meetings organised by

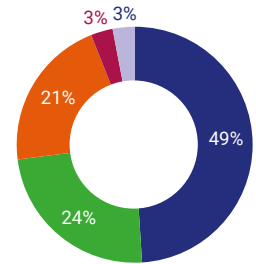
The Slovak Innovation and Energy Agency (SIEA)

Date	Type	Mode	Participants
29th June 2022	Meeting	Hybrid	27
15th May 2023	Meeting	Hybrid	16
22nd May 2023	Meeting	Hybrid	88

Total number of participants: **131**

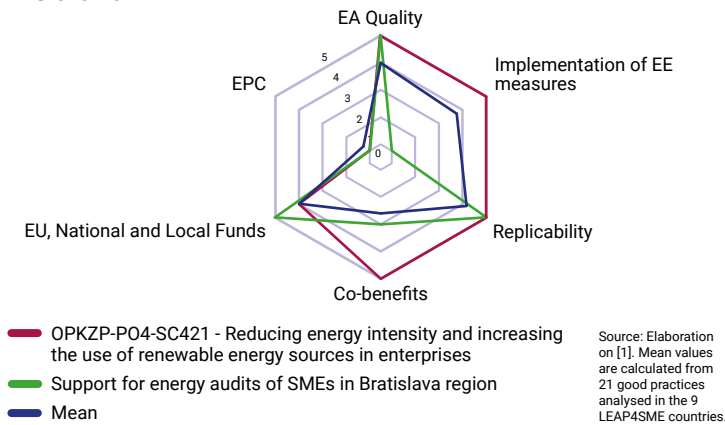
Type of participants

- Business
- Policy makers and funding bodies
- Energy experts
- NGOs
- Business associations

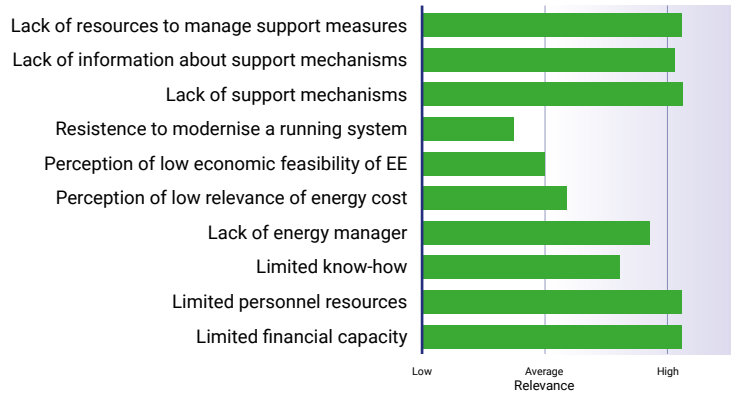


Background from policy assessment and surveys

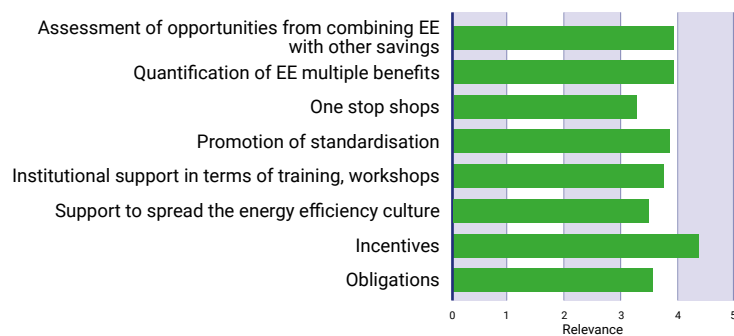
Evaluation of good practices in energy audit supporting programs in Slovakia



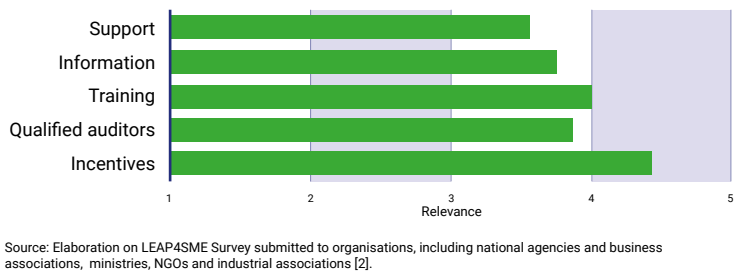
Energy Audits: Most relevant barriers for SMEs



Measures to increase the implementation of energy audit recommendations for SMEs



Energy Audits: Most relevant needs for SMEs



Observatories' main features

Main topics

- Overview of official policies for energy efficiency and energy audits
- Barriers to energy audits and energy efficiency in SMEs
- Case studies for energy efficiency in SMEs

Organisational tips and challenges

- Difficulties in engaging SMEs
- Involvement of business associations in promoting the event and disseminating its results
- Participants need to see concrete facts, case studies, numbers
- Inviting external experienced speakers might help

[1] LEAP4SME Deliverable D3.3 Collection of good practices
 [2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

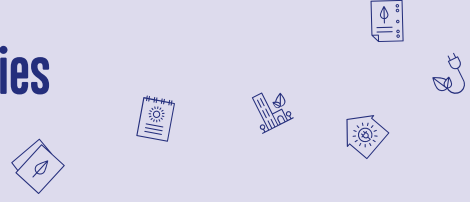
From SMEs and business associations

- **Awareness:** The promotion and implementation of systematic and comprehensive solutions in enterprises should be an important topic, and special attention should be paid to model energy solutions for SMEs to give a clear idea of what an energy audit is and what the implementation of measures entails.
- **Tailoring:** The energy efficiency in SMEs mechanisms should be based on sectoral approaches (with a focus on manufacturing) more than on general programmes. Interest in audits would increase if they were included as an eligible cost in support schemes.
- **Financial constraints:** For all types of SMEs, the financial capacity of the enterprise is an important barrier. For medium-sized enterprises, the long payback period of the measures is also a significant constraint, with a timeframe of more than 5 years being out of their interest.

Shared with other stakeholders (policy makers, funding bodies, academics etc)

- **Skills:** The main challenge in increasing energy efficiency in SMEs is promoting a culture of energy efficiency. Hence, continuous training and formation is necessary.
- **Monitoring:** Energy consumption is rarely monitored by SMEs and hence additional support measures, specifically targeted to monitoring, could be useful to increase the adoption of monitoring systems and then the knowledge of firms' own consumption profiles.
- **Audit quality:** The quality of the energy audit and implemented measures should be increased, for example by inspections by the state authority, and it should be assessed to what extent a compulsory professional examination could be a guarantee of the quality of the contractor's work.





Details on national observatories

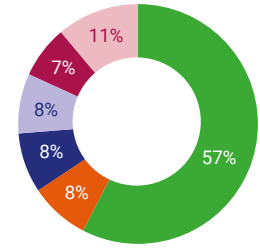
Meetings/interviews organised by **Energy Saving Trust (EST)**

Date	Type	Mode	Participants/Interviewees
1st September 2022	Interview	Online	3
30th January 2023	Meeting	Online	25
February - March 2023	7 Interviews	Online	9
13th March 2023	Meeting	Online	25

Total number of participants/interviewees: **62**

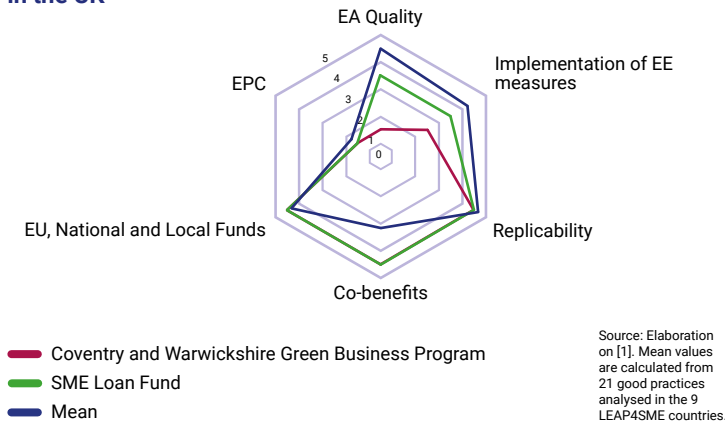
Type of participants/interviewees

- Policy makers and funding bodies
- Energy experts
- Business
- Business associations
- Academia
- Other

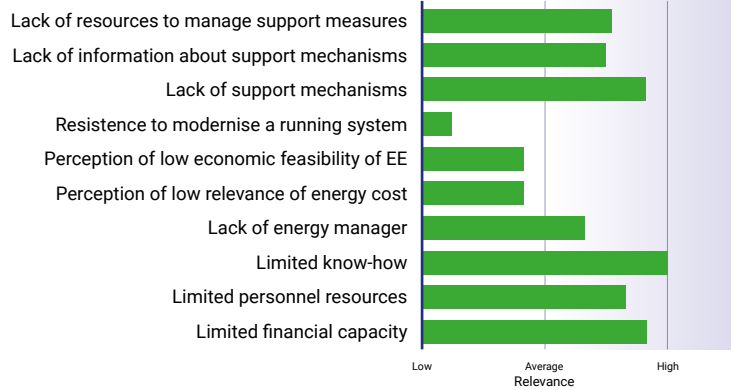


Background from policy assessment and surveys

Evaluation of good practices in energy audit supporting programs in the UK

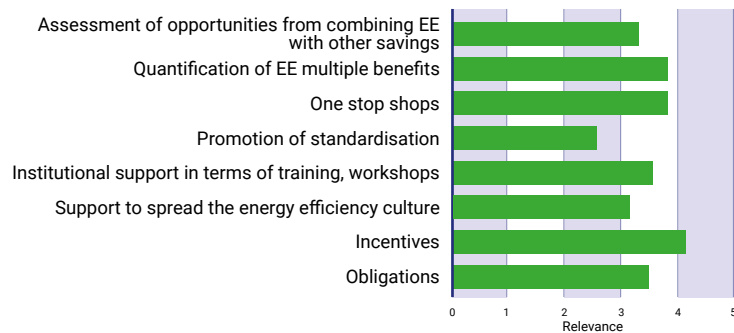


Energy Audits: Most relevant barriers for SMEs



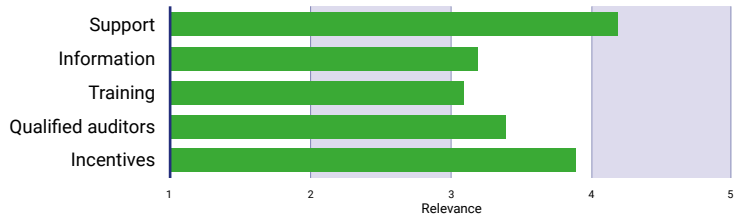
Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Measures to increase the implementation of energy audit recommendations for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Energy Audits: Most relevant needs for SMEs



Source: Elaboration on LEAP4SME Survey submitted to organisations, including national agencies and business associations, ministries, NGOs and industrial associations [2].

Observatories' main features

Main topics

- Energy efficiency barriers internal to the firms and firm behaviour
- The role of energy audits in unlocking energy saving measures
- Unlocking NetZero financing for SMEs through local business support programmes

Organisational tips and challenges

- There were challenges in engaging national experts to present at the training event
- Low response rate to the training evaluation questionnaire

[1] LEAP4SME Deliverable D3.3 Collection of good practices
 [2] LEAP4SME Deliverable D3.2 Report on the characterisation of SMEs to steer an effective development policy



Key recommendations

From policy makers and funding bodies

- **Financial constraints:** A starting point for engaging with businesses could be focusing on support measures directed towards commercial benefits, such as installing solar PVs to reduce energy bills and help payback the loans quickly. It would also be beneficial to extend the payback period on loans.
- **Tailoring:** The support should be tailored to the firm size. 99.3% of the UK business population are smaller enterprises and are difficult to engage. They need higher and more continuous support.
- **Skills:** Policies should be focused also on addressing skill shortages, increasing the pool of specialists, and improving the access of SMEs to expert and impartial advice, like business-focused advice services.
- **Awareness:** Policies should include information campaigns to make SMEs aware of which support measures are available as well as to constantly re-engage them.
- **One-stop-shop:** Policies should address time and resources constraints of SMEs and support the development of one-stop-shop models, ensuring that businesses get the support and guidance they need in one place after a feasibility assessment. A one-stop-shop backed up by public authorisation can help building trust of firm managers in the investment proposal.

Shared with other stakeholders (SMEs, business associations and academia)

- **Decision making:** Removing external barriers (economic, technical, financial) does not guarantee that SMEs change their behaviour and invest more in energy efficiency. Indeed, the decision-making process for an SME is complex, and SMEs have a high heterogeneity.

