

**LEAP
SME**

4
ENERGY AUDIT POLICIES
TO DRIVE ENERGY
EFFICIENCY

LEAP4SME international observatory on energy efficiency policies for enterprises and SMEs – key messages

E. Biele, C. Herce*, C. Martini, M. Salvio, C. Toro

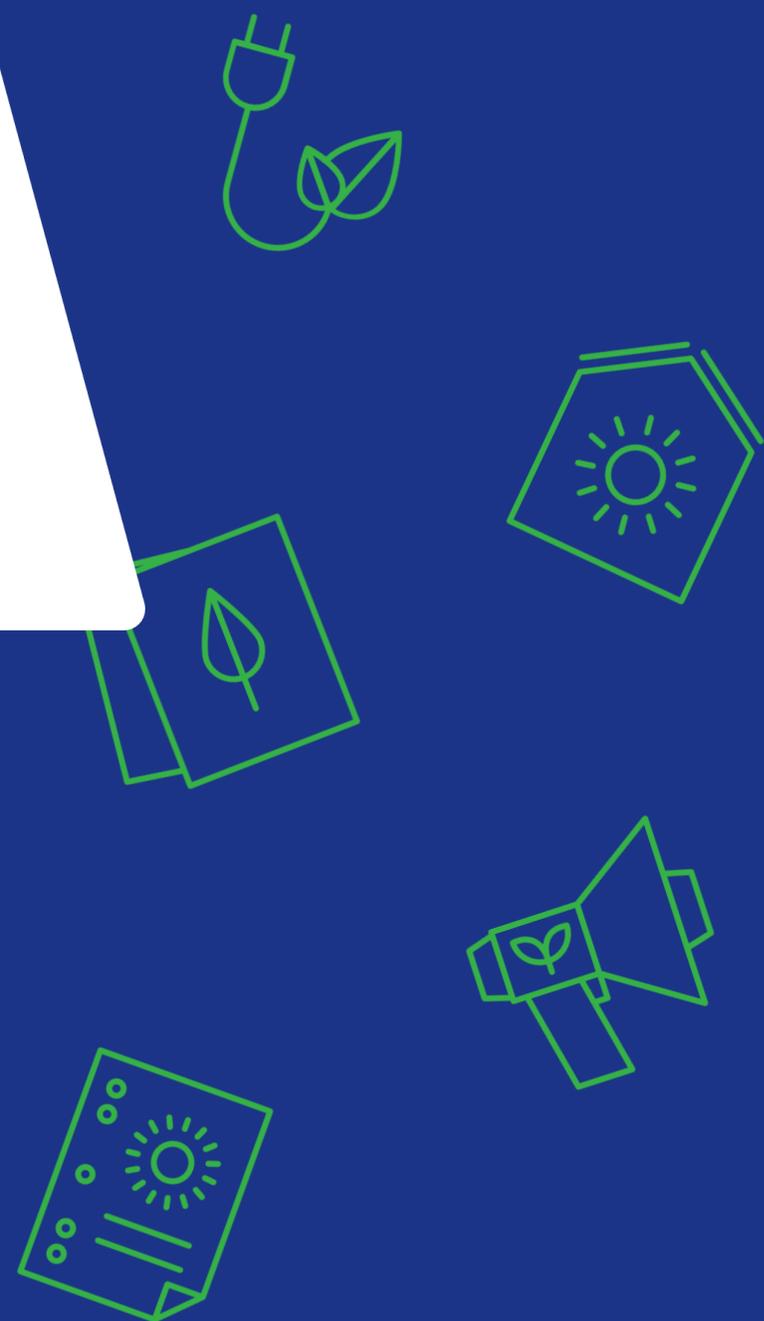
17th SDEWES Conference – Paphos (CY), 8 November 2022



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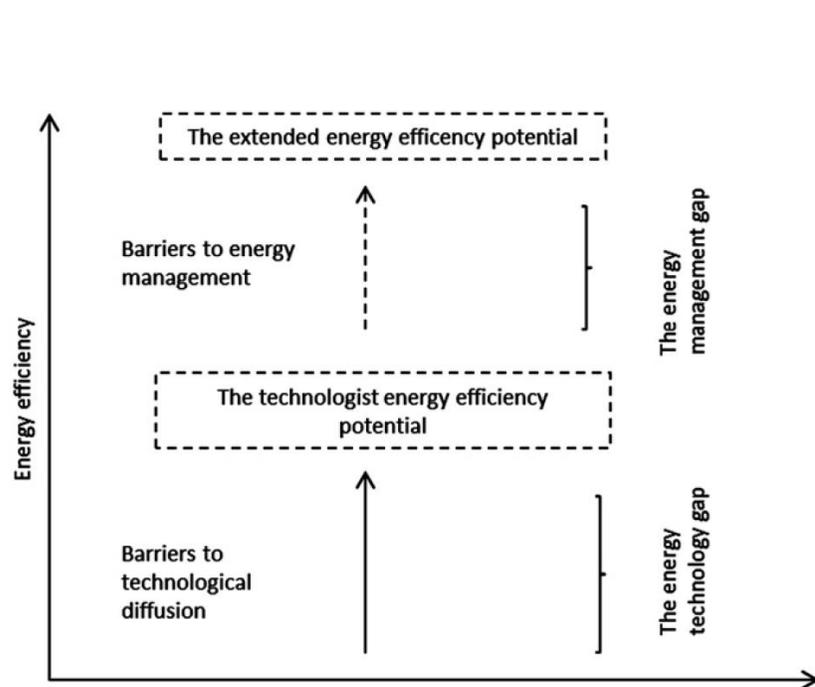


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1. Energy Efficiency in SMEs

- **Energy efficiency gap** refers to the improvement potential of energy efficiency or the difference between the cost-minimizing level of energy efficiency and the level of energy efficiency actually realized.
- **Barriers** for EE in SMEs are multiple and depends on size (small, medium and large), sector, etc...



S. Backlund, et al. Energy Policy, 51 (2012):392-396

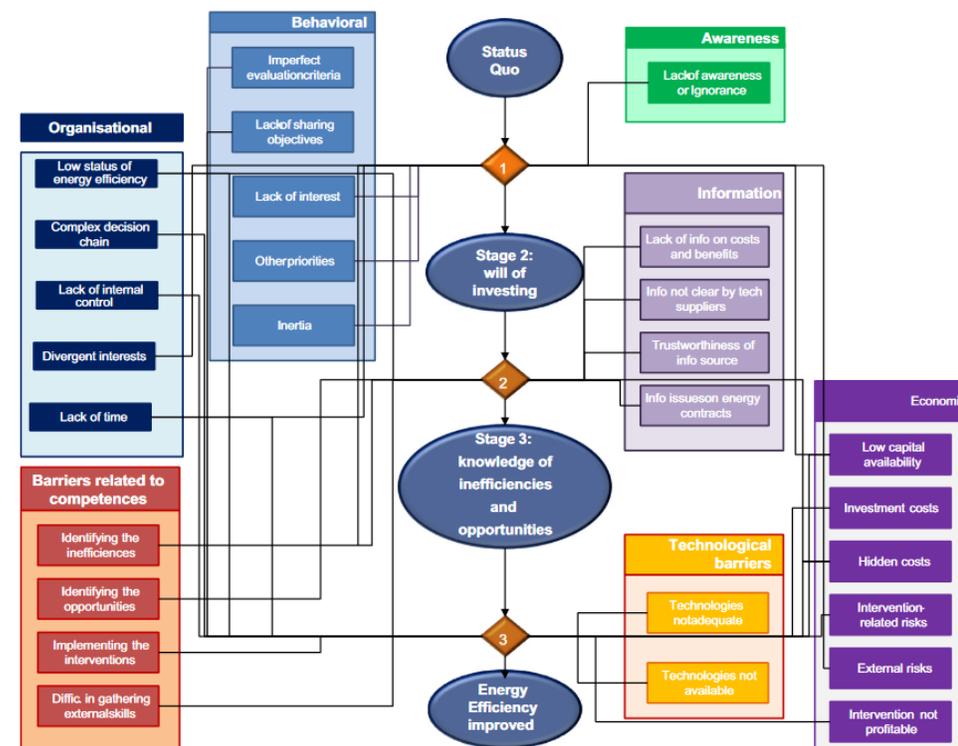


Fig. 5. The decision-making process and the barriers that can affect its actions, maybe inhibiting the change from one stage to another.

E. Cagno, et al. Renewable Sustainable Energy Rev., 19, 2013:290-308

1. Energy Efficiency in SMEs

- Energy Efficiency **policies** are generally economic, supportive (training, information, energy audits...) prescriptive (regulation, mandates and agreements)
- Usually, the encouragement of EE in the SMEs is based on **voluntary** agreements, in order to limit the economic and administrative burden.
- However, due to the intrinsic **heterogeneity** of the SME sector, designing EE policies specifically for SMEs remains a difficult task.
- The most successful approaches include:
 - Promoting the development of **energy audits**
 - Balancing the **economic and supportive** policies
 - Implementing energy efficiency **networks** as cost-effective actions for industrial SMEs
 - Targeting interventions through strategic **segmentation**

LEAP
SME

**NATIONAL AND INTERNATIONAL
OBSERVATORIES**

2. LEAP4SME project

MAIN GOALS

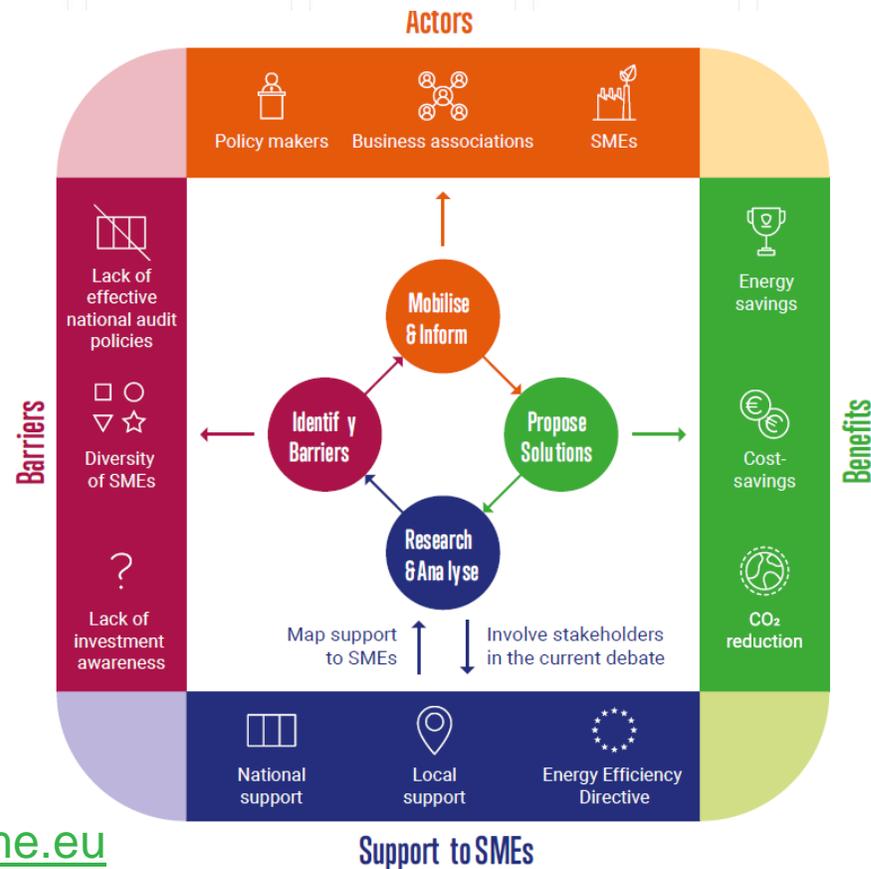
- **Mapping and understanding** the complex context of national and local support to SMEs
- **Proposing effective and realistic solutions** to policy makers and policy implementers in terms of policy schemes, cross-cutting policy solutions embracing both energy and non-energy benefits, policy recommendations
- **Contributing**, through LEAP4SME research, analysis, and stakeholders' involvement, to help the Institutions finding solutions to fill the gap of data when it comes to match Energy & SMEs
- **Knowledge sharing** (successes, barriers and failures) on national policies



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www.leap4sme.eu



Italian National Agency for New Technologies, Energy and Sustainable Economic Development

2. LEAP4SME project – International observatory



To **discuss** on 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; to look for links among SMEs and large enterprises policies; to discuss on the topics of Energy Management Systems and Energy Audit policies/techniques for SMEs in view of the new EED requirements



Representatives of **15 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



Discussion with keynote speeches and presentations to address the topics

2. LEAP4SME project – International observatory

INTERNATIONAL OBSERVATORY MEETING ON ENERGY EFFICIENCY POLICIES FOR ENTERPRISES AND SMES

15 & 16 September

Liaison Office of the European Parliament

Via 4 Novembre, 146

Rome



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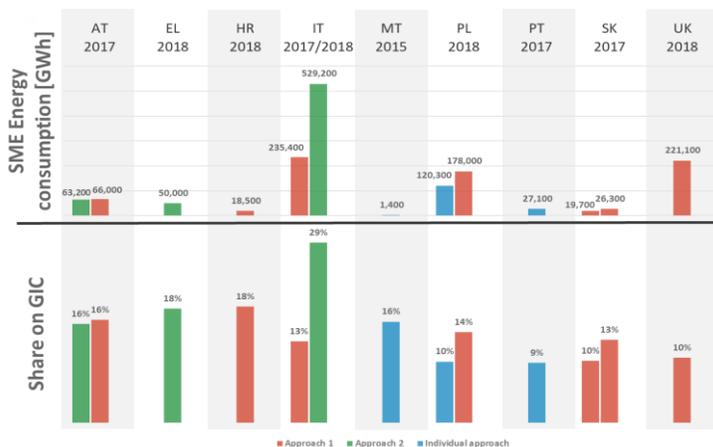
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3. LEAP4SME results

Data availability for policy making purposes

- Good availability of **economic-related data**, number of enterprises & employees in European countries
- Lack of **energy-related data** on SMEs: insufficient data availability for properly planning targeted energy efficiency policies. Need to develop methodologies to assess the share of the SME sector energy consumption at national levels
- Need for **KPIs** to support policy design and implementation as well as to monitor policy results



GENERAL SECTOR KPIS		
REFERRED TO ALL ENTERPRISES, BOTH LARGE AND SMES PER SECTOR (INDUSTRY, TRANSPORTS, TERTIARY ETC.) - 1/2 DIGITS NACE CODE		
KPI Group	Availability	Relevance
GENERAL	Highly available	Highly important
ENERGY CONSUMPTION	Moderately available	Highly important
CO ₂ EMISSIONS	Highly available	Moderately important
ENERGY INTENSITY	Moderately available	Moderately important
COST OF ENERGY	Lowly available	Highly important
POTENTIAL SECTOR	Lowly available	Highly important

GENERAL SME SECTOR KPIS		
REFERRED ONLY TO SME		
KPI Group	Availability	Relevance
GENERAL	Highly available	Highly important
ENERGY CONSUMPTION	Lowly available	Highly important
CO ₂ EMISSIONS	Moderately available	Moderately important
ENERGY INTENSITY	Lowly available	Moderately important
COST OF ENERGY	Lowly available	Highly important
POTENTIAL SECTOR	Lowly available	Highly important

[Deliverables | LEAP4SME](#)

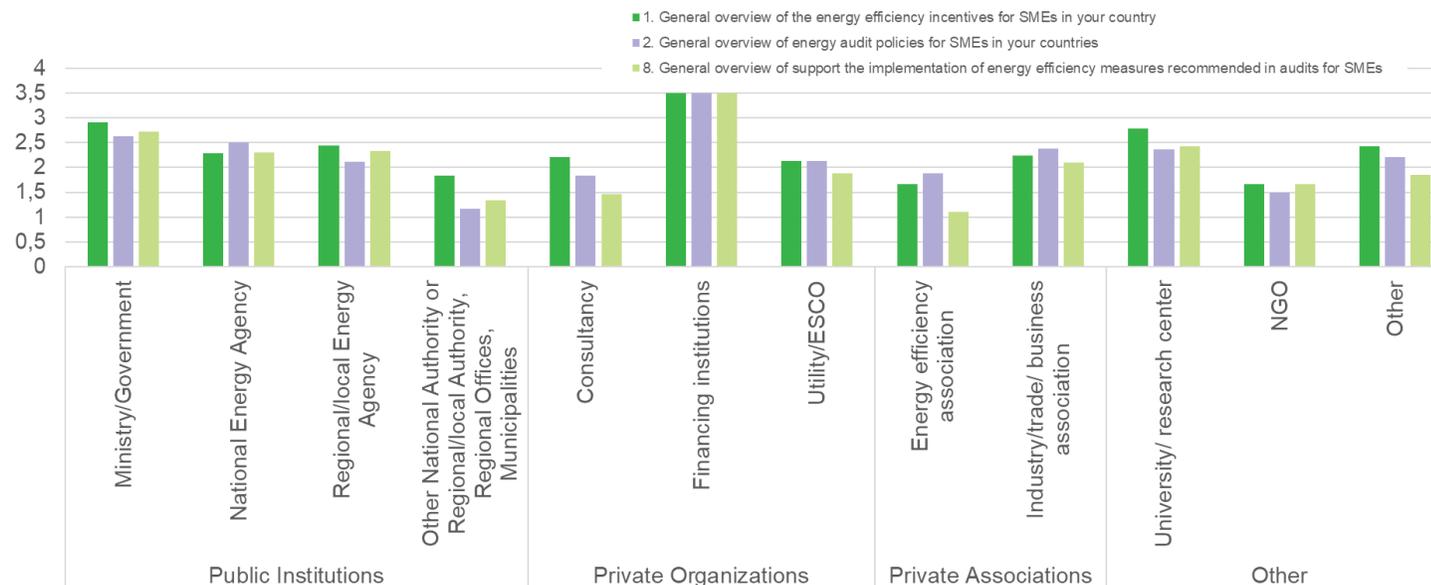
3. LEAP4SME results

Survey/semi structured interviews (170 opinions collected to organizations)

- Both energy efficiency incentives and energy audit policies for SMEs **are insufficiently adequate**
- Energy efficiency incentives and (particularly) energy audit policies for SMEs appears to be more negatively assessed **by private than public** organizations
- It would be useful to objectively categorize SMEs according to **size, sector and consumption**
- The opinion about policies for energy audits seems sensibly more negative at **regional/local** level than at national level



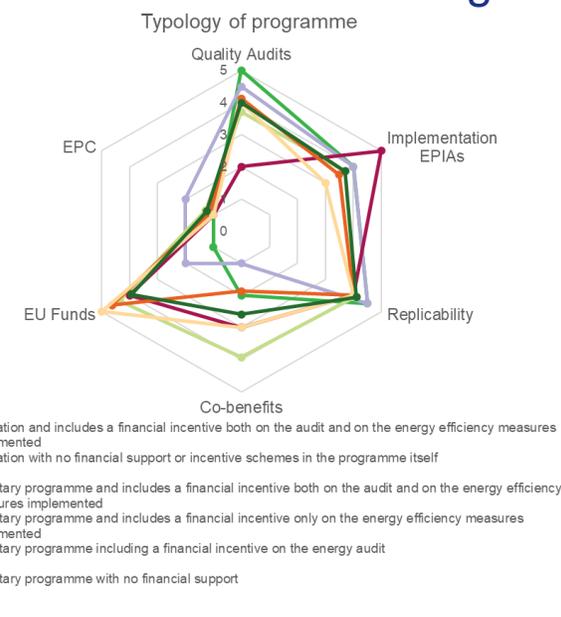
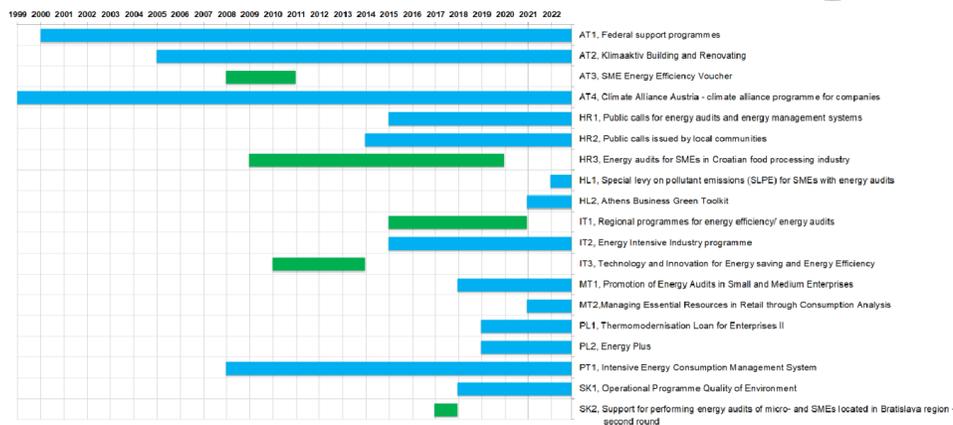
[Deliverables | LEAP4SME](#)



3. LEAP4SME results

Assessment of energy audit & energy efficiency policies in SMEs

- Generally, the **quality** of the assessed energy audits is higher in the obligation policies than in the voluntary programmes, and the quality required increases if the implementation of EEMs is mandatory
- The programmes that only fund the **implementation of EEMs** seem to be not very restrictive with the quality of the audits
- The use of **EU funds and the replicability** of the policies present a good evaluation in all the categories
- The analysis of **co-benefits** presents a high dispersion
- The few cases of use of **EPC** fall under the obligation policies



4. Recommendations and priorities for policy makers

- 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
- **Simplify** the policy schemes is a key issue, as well as the need to provide support to ensure high access rate to the incentive mechanism and good cost effectiveness of programs
- **Empower** business stakeholders to develop missing supports collaboratively
- Promote the creation of **networks** of SMEs and auditors to (also informally) exchange experiences
- Support actions and synergies among **Chambers of commerce, associations, financial institutions** to engage the SMEs
- Ensure good quality in energy audits through a **certified** supply chain of energy auditors and energy advisors

4. Recommendations and priorities for policy makers

- Work on the availability of **benchmarking** information at SMEs level, to inform the decision-making process at company level
- 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
- Understand the relationship **between EEMs' characteristics and company performance** to try to better identify/quantify/evaluate the impacts of the EEMs' adoption
- Identify and involve the **decision makers** in order to strength the relationship between EEM's characteristics and company performance and the absence of misalignments
- Consider the real challenge of understanding which **characteristics of the business and application context** influence the relationship

4. Recommendations and priorities for policy makers

- Pay attention to the **high prices** of energy (electricity, gas) which are much more a priority than any other topic in this period
- 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 EEMs
- Evaluate the EEMs 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

5. Conclusions and summary

- This paper presents the preliminary key results from the central meeting of the “International observatory on energy efficiency policies for enterprises and SMEs” of LEAP4SME project. This **work-in-progress** will be subsequently **enhanced** with deeper analysis and enriched with the results of **the nine national observatories** from the country partners (Austria, Croatia, Greece, Italy, Malta, Poland, Portugal, Slovakia, and United Kingdom)
- The results could be considered as policy recommendations for the final definition an operational implementation of the **Art.11 of new Energy Efficiency Directive**, with some remarks:
 - Despite of the efforts in energy characterization and policy development, **addressing SME sector is very challenging and a lack of quantitatively data is observed**
 - **Strategic segmentation** of enterprises in terms of energy consumption and activities (and not only in economic aspects) is necessary to an effective implementation of EED
 - **Information and coordination activities** are necessary at international, national, and local levels in order to involve the SMEs and complement the economic policies

Thank you for your attention!

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