EPEE

The voice of the heating, cooling and refrigeration industry

LESSONS LEARNED

ECODESIGN

Executive Summary

EPEE, representing the refrigeration, air-conditioning, and heat pump industry in Europe, supports the principle of setting Minimum Energy Performance Standards (MEPS) and Energy Labels, regulated in the EU under the Ecodesign Directive and the Energy Labelling Framework Regulation.

Based on over a decade of experience with numerous product groups regulated by this framework, EPEE wishes to share some lessons learned, critical success factors, and recommendations from an industry perspective in Europe – bearing in mind that MEPS, even if successful in many countries, have their limitations. The energy challenge cannot be solved at product level only. An integrated approach, looking at both energy supply and demand side measures and taking into account the entire system, will be crucial to reach European and global energy and climate goals.

7 lessons learned

1. The systematic and transparent involvement of a broad range of stakeholder groups throughout the process of setting MEPS is critical to develop balanced policy measures;
2. MEPS should be based on a well-defined and clear methodology to ensure a reliable and transparent process;
3. The methodology to set MEPS should always include a least life cycle cost (LLCC) analysis to ensure value added from the market uptake of products which are energy efficient from a holistic perspective;
4. MEPS should always target the final product level and be well-aligned with each other;
5. MEPS should always be consistent with other legislation;
6. The Energy Label works best for "off-the-shelf-products", complementing MEPS;
7. Enforcement is key to protect consumers, ensure a level playing field, and reach energy and climate goals.

I. Introduction

Fossil fuels account for roughly 80% of the total final energy consumption in the world. At over 70%, they are by far the biggest contributor to total greenhouse gas emissions and also impact human health. In 2018, air pollution from burning fossil fuels was estimated to be responsible for 4.5 million deaths, 1.8 billion days of work absence, 4 million new cases of child asthma, and 2 million preterm births, resulting in total economic costs of 2.9 trillion USD.[1]

Heating and cooling have a key role to play, as they account for half of the total final energy consumption in the world, with 90% of it still being based on fossil fuels – mainly for heating purposes. By contrast, renewables already represent over 25% of the power sector and are growing steadily. This trend is particularly important for cooling which is mainly driven by electricity.[2]

A number of recent global reports analysed the heating & cooling sector more closely, with a focus on cooling, since this market is expected to increase significantly over the coming decades in light of a warming climate and trends such as urbanisation, digitalisation, and a growing middle class. The findings of all reports concur that cooling is essential for life – safe and fresh food, health, well-being, productivity – and that there is significant potential for emission savings, both through energy efficiency and the refrigerant transition.

The refrigerant transition is already addressed by the Montreal Protocol and the recently agreed Kigali Amendment (see also EPEE lessons-learned from the EU F-Gas Regulation)[3]. With respect to energy savings, one policy measure has been quoted repeatedly, namely the setting of "minimum efficiency performance standards" (MEPS) for products. Considered by many governments as a successful measure to reduce energy demand, MEPS for appliances and equipment have already been in place for many years in several regions of the world, Europe being one. MEPS are regulated under the Ecodesign Directive and complemented by the Energy Labelling Framework Regulation.

This paper has been produced by EPEE, representing the refrigeration, air-conditioning and heat pump industry in Europe, to provide an overview of lessons learned from the European experience on Ecodesign and Energy Labelling, and to put it in the broader context of energy-related legislation in the EU. It will first explain how the process in the EU works before concluding on seven lessons learned, each followed by specific recommendations.

Note that those countries looking at the European example should keep in mind that one size does not fit all, and rules aimed at increasing energy efficiency have to be adapted to the specificities of each market. Developed and developing markets have different characteristics and need tailor-made measures taking into account many different factors including the size of the market, the type of the market, cultural and behavioural aspects, and market actors.

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[1] Centre for Research on Energy and Clean Air

[2] REN21 Status report

[3] www.epeeglobal.org/wp-content/uploads/EPEE_Lessons-Learned-document.pdf

II. The Ecodesign and Energy Labelling Framework in the EU

The Ecodesign Directive (2009/125/EC) and Energy Labelling Framework Regulation (2017/1369) form the EU's framework to increase the energy efficiency of products, aiming to create a "push and pull" effect on the market. Ecodesign requirements oblige ("push") manufacturers to comply with minimum efficiency performance standards (MEPS) for certain product groups in order to eliminate the least performing products from the market. MEPS can be complemented by an energy label to motivate customers ("pull") to buy the most efficient product.

In the absence of Ecodesign MEPS and/or Energy Labels, which are mandatory measures, manufacturers can also conclude Voluntary Agreements (VA) which have to fulfil certain criteria in order to be officially recognised by the European Commission. VAs will not be further discussed in the context of this paper.

There are currently 31 Ecodesign product measures – also known as Commission Regulations or Implementing Measures – in place in the EU and 15 product groups that require an energy label. However, the situation is constantly evolving, with existing measures being revised and new measures upcoming. Regulated product groups include both B2C and B2B appliances and products, such as lighting, heaters, fridges & freezers, air conditioners & fans, televisions, kitchen appliances, washing machines, and many more.

1. The EU's Ecodesign process in a nutshell

The Ecodesign Process is based on five major steps and systematically includes a variety of stakeholders from EU and EEA Member States and the European Commission, technical consultants, NGOs, and consumer organisations through to industry. On average it takes five years from the start of the preparatory study until the publication of the final Commission Regulation for a given product in the Official Journal. The process for the Energy Label is similar to Ecodesign in terms of Working Plan, Preparatory Study and Draft Commission Regulation. It differs, however, in the way a measure is finally adopted.

1.1. Working Plan: The European Commission adopts a Working Plan, which sets out an indicative list of priority products to be explored for their Ecodesign potential over the next 3 years.

1.2. Preparatory Study: Each product group mentioned in the Working Plan is analysed in a preparatory study in order to assess whether and which Ecodesign requirements are appropriate (according to the Methodology for Ecodesign of Energy-related Products - MEErP). During the preparatory study, stakeholders are regularly asked for their input.

1.3. Draft Commission Regulation: The European Commission develops a draft Commission Regulation based on the outcome of the preparatory study. The draft is submitted to the Consultation Forum (representatives of EU and EEA Member States and of stakeholders such as business federations, NGOs, and consumer organisations) for comments and is followed by an impact assessment.

1.4. Vote: After notification to the WTO, the draft is submitted to a vote in the Regulatory Committee (representatives of EU Member States).

1.5. Scrutiny: The draft Commission Regulation remains under the scrutiny of the European Parliament and the Council of the EU for 3 months.

2. The Methodology

Products that could yield high energy savings and resource use improvements are selected via Ecodesign Working Plans. Each Working Plan normally lasts 3-4 years and is informed by an Ecodesign Working Plan Preparatory Study to analyse the state of play with regard to product groups and horizontal initiatives. Currently, the third Ecodesign Working Plan (2016 to 2019) is in force, and a new Working Plan for 2020 to 2024 is being elaborated. Subsequently, for each product group identified in the Working Plan, a detailed, 2-year preparatory study is carried out using the Methodology for Ecodesign of Energy-related Products (MEErP).

2.1. The Ecodesign Working Plan

The product types that may currently be covered by Ecodesign rules are those that use energy or those that are energy-related. For product groups to be eligible for Ecodesign and/or energy labelling, the following key criteria need to be fulfilled:

- Significant sales or energy/resource use (indicatively 200,000 units per year in the EU for small products and a similar magnitude of overall impact for larger products);
- The products must have a significant environmental impact; and
- The products must offer significant potential for environmental improvements without entailing excessive costs.

2.2. The Methodology for Ecodesign of Energy-related Products (MEErP)

The MEErP provides the structure of the preparatory study, includes 7 main tasks, and is the basis for the development of the draft Commission Regulation. Throughout the process, stakeholders are asked for their input. This preparatory study normally lasts 2 years.

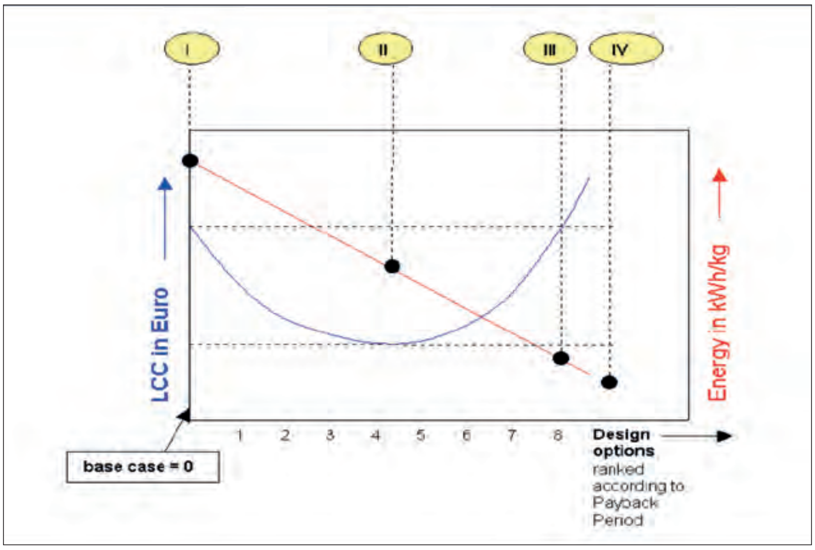
Task 1 – Scope (definitions, standards and legislation);
Task 2 – Markets (volumes and prices);
Task 3 – Users (product demand side);
Task 4 – Technologies (product supply side: best available and best non-available technologies);
Task 5 – Environment & Economics (Base case Life Cycle Assessment & Life Cycle Cost);
Task 6 – Design options;
Task 7 – Scenarios (policy, scenario, impact, and sensitivity analysis).

2.3. The principle of Least Life Cycle Cost (LLCC)

Ecodesign rules are intended to achieve energy savings whilst ensuring the continued affordability of the regulated products. To this end, the principle of the Least Life Cycle Cost (LLCC) is applied.

The LLCC represents the point where the energy efficiency requirements result in the lowest total cost of ownership of a product – in other words, when the energy savings due to the increased energy efficiency are the highest, and the increase of the purchase cost the lowest. In order to determine the LLCC of a given product group, the base case (BC), best available technology (BAT), and best non-available technology (BNAT) are defined.

Subsequently, a life cycle assessment (LCA) from 'cradle-to-grave' (production, distribution, use and end-of-life, including recycling and re-use) of the product and its improvement options will be carried out to analyse the impact on resource use and the environment. Indicators for the LCA include, for example, materials, energy and water resources, and waste.



Archetype LCC curve

I = Base Case; II = LCC, III = no financial loss (break-even point); IV = BAT point

COWI, VHK: Methodology for Ecodesign of EnergyÐrelated Products, MEErP 2011, Methodology Report, Part 1: Methods

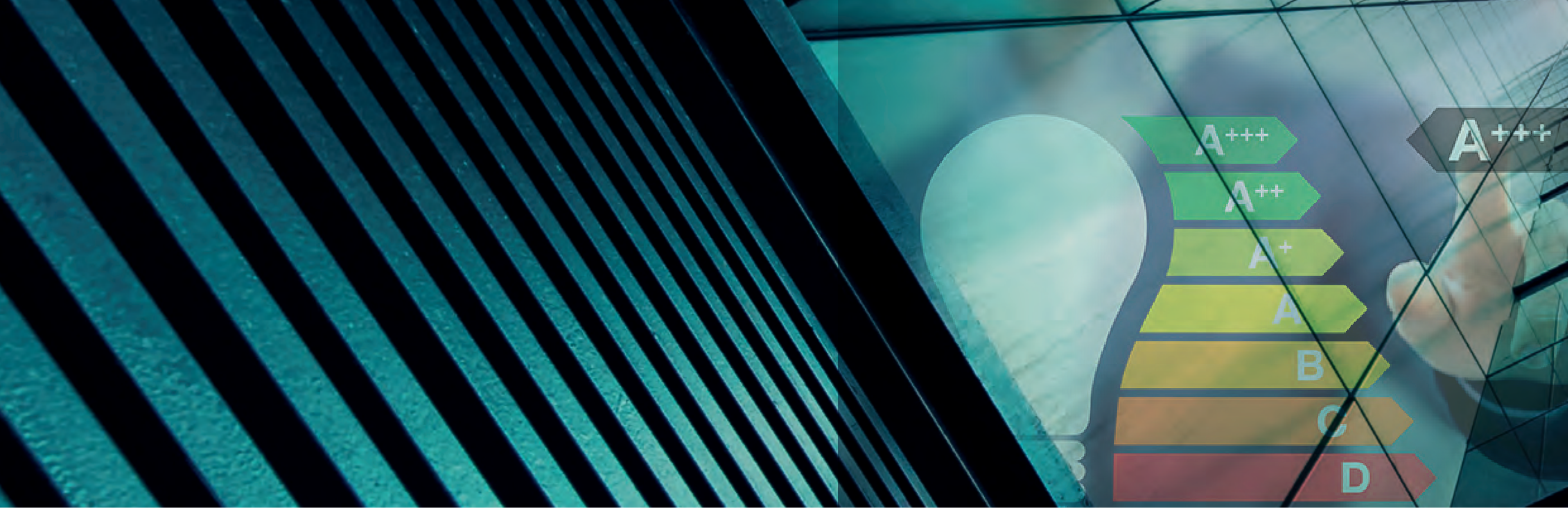
Up to design option #4, the LCC curve will decrease due to operational savings. After option #4, the extra savings due to lower running costs will be less than the increase of the purchase cost, and the LCC will increase. The LLCC represents the point of least life cycle cost. This point will be the threshold value for the minimum Ecodesign requirement. The break-even point is where the purchasing power of the consumer remains equal to the current situation. Beyond this point, there would be a significant negative impact on consumers in terms of affordability and the life cycle cost of the product.

The last point on the LCC curve indicates the costs at the maximum technical potential, the so-called best available technology (BAT). The BAT-point is not intended as a target level for legislation. It indicates what is technically feasible with the best-performing products and technologies available in the short term and can serve, for example, as an indicator for an energy label.

3. The role of standards

Following specific requests – called "standardisation requests" or "mandates" – from the European Commission, the European Standardisation Organisations (ESOs) CEN and CENELEC develop European standards that support European legislation in a number of domains. The mandated standards are called "Harmonised Standards" and their references and titles are published in the Official Journal of the European Union.

In the field of Ecodesign, CEN and CENELEC are mandated by the European Commission to develop Harmonised Standards in support of the product specific Ecodesign implementing measures. These technical specifications set the conditions to test the compliance of a product with the mandatory requirements, providing a presumption of conformity with the elements covered by the implementing measure. Only then can the manufacturer affix the CE marking and sell it in the EU.



4. CE marking & market surveillance

CE marking indicates that a product has been assessed by the manufacturer and deemed to meet EU safety, health, and environmental protection requirements. It is required for products placed on the EU market wherever they were manufactured. CE marking is only obligatory for products for which affixing the CE mark is specified as a requirement. This is the case for Ecodesign.

Product manufacturers bear the sole responsibility for declaring conformity with all requirements, including Ecodesign requirements. They have to identify the applicable directive(s)/regulation(s) and relevant harmonised standards, verify whether a notified body needs to be involved for the conformity assessment, test the product and check its conformity, put together the required technical documentation, and finally affix the CE marking and establish the EU Declaration of Conformity.

For certain products, for example those that present higher safety risks such as gas boilers, compliance cannot be checked by the manufacturer alone. In such cases, an independent organisation, also called a "notified body" appointed by national authorities, must perform the verification. The manufacturer may affix the CE marking to the product only once this has been done.

Once the CE marking is affixed to the product, competent national authorities (market surveillance authorities – MSAs) can request proof of conformity in the form of documentation and/or proceed to testing the products. If products are placed on the market without a CE marking and/or if they are found to be non-compliant, they have to be withdrawn from the market, and fines will apply depending on the EU Member State.

III. Ecodesign and Energy Label in the broader context of the EU's energy and climate goals

The Ecodesign Directive and Energy Labelling Framework Regulation are part of the EU's Clean Energy Package which was finalised at the end of 2019 and goes far beyond a mere product efficiency approach. It addresses all relevant aspects related to energy production and consumption and includes the following measures:

- **Buildings:** Energy Performance of Buildings Directive
- **Energy supply:** Renewable Energies Directive
- **Products:** Ecodesign Directive and Energy Labelling Framework Regulation
- **Energy Efficiency:** Energy Efficiency Directive
- **Governance:** Governance of the Energy Union & Climate Action Regulation
- **Electricity:** Electricity Market Design Regulations

The European Green Deal takes this approach further, with dedicated initiatives specifically targeting key sectors such as buildings with the "Renovation Wave" and strengthening an integrated approach with the "Energy System Integration Strategy". The latter aims to move from a linear flow of energy, where transport, industry, buildings, and energy supply are addressed in silos, to a circular flow where synergies between all sectors are exploited. Top priorities of the strategy include strengthening the energy efficiency and use of waste heat, renewable electricity, and electrification of end use sectors such as heating, the phase-out of fossil fuels and equal treatment for all energy carriers, rewarding demand side flexibility and connectivity.

The Clean Energy Package and new initiatives such as the Energy System Integration Strategy show the crucial importance of addressing both energy supply and demand. The approach recognises that without using energy more efficiently, it will not be possible to transition to renewable energies, and that without the energy transition, it will not be possible to achieve carbon neutrality by 2050.

IV. Lessons learned and recommendations

Preliminary remarks

As mentioned in the introduction, MEPS, often combined with energy labelling, are a popular solution to address energy efficiency at product level, and many countries in the world have enshrined MEPS in their national legislation. In the EU for example, the European Commission estimates that with the 10 latest Ecodesign implementing measures that were published at the end of 2019 alone, 167 TWh of final energy savings per year could be achieved by 2030. If properly implemented and enforced, this would be equivalent to the annual energy consumption of a country like Denmark and corresponds to a reduction of over 46 million tonnes of CO_2 equivalent per year. In addition, through these measures European households could save on average €150 per year.

However, while MEPS seem straight forward, the devil is in the detail. Experience has shown that MEPS can only be successful and yield the expected savings if certain criteria are met, particularly related to the process and methodology of setting MEPS and their subsequent enforcement. The following lessons-learned provide an overview of such criteria, based on the European experience. Nevertheless, it must be noted that the regional context plays an essential role. Requirements, technical possibilities, economic factors, and infrastructure in developing countries are different from developed countries, and any decision therefore needs to be carefully evaluated and adapted to the regional context.

LESSON 1

The systematic and transparent involvement of a broad range of stakeholder groups throughout the process of setting MEPS is critical to develop balanced policy measures

The EU's Ecodesign process systematically includes a variety of stakeholders from representatives of EU Member States and the European Commission, technical consultants, NGOs and consumer organisations through to industry. Regular stakeholder meetings, as well as the official Ecodesign Consultation Forum, bring together all relevant actors to discuss and provide input to the Ecodesign Working Plan, Preparatory Study, and draft Commission Regulation. Such process fosters an open dialogue between policy-makers, civil society, and industry, ensuring that all perspectives are taken into account when drafting the regulation.

➔ Recommendations:

- Regular meetings, open to all interested stakeholders, to present and exchange information on latest developments.
- A web-based platform to upload all the latest information related to the development of the MEPS, including studies and position papers from the various stakeholder groups.

LESSON 2

MEPS should be based on a well-defined and clear methodology to ensure a reliable and transparent process

In the EU, MEPS are set based on the MEErP (methodology for Ecodesign for Energy Related Products, see also chapter II.2.2). The MEErP includes 7 tasks and is accessible to all stakeholders, meaning that all actors are fully aware of the type of information that will be gathered. It provides a level playing field, as all actors can provide their input to all the tasks, following the same structure. In addition, the MEErP itself is also subject to regular reviews to adapt it to current circumstances and priorities.

➔ Recommendations:

- Ensure that all relevant aspects for the setting of MEPS in each country or region are taken into account. The 7 tasks of the MEErP provide a useful example (see chapter II.2.2).

- A thorough market analysis based on collecting data from all stakeholders, as well as a least life cycle cost analysis, should always be part of the methodology, as affordability is a critical success factor for the uptake of energy efficient products by the market.

- Work with independent and competent third parties (technical consultants) to carry out the required tasks of the methodology and provide sufficient resources to the consultants to fulfil all required tasks. For example, if market data is not available, consultants should be enabled to buy such data from relevant market research institutes.

- The methodology adopted should ensure a timely and stringent process. Delays undermine legal certainty for industry investments, and the data used in the preparatory studies becomes outdated, resulting in unrealistic assumptions in the final measures.

- Build flexibility into the process to adapt the methodology in case of new circumstances that may require the setting of different priorities.

LESSON 3

The methodology to set MEPS for new product groups or for the review of existing product groups should always include a least life cycle cost (LLCC) analysis to ensure the uptake of energy efficient products in the market

The EU's MEErP systematically includes a least life cycle cost analysis (LLCC) to ensure that MEPS are set where the total cost of ownership is lowest, in other words where the sum of a product's purchase price and its lifetime energy cost are at their lowest level. Indeed, product efficiency should never be seen in isolation but always in the context of resource efficiency, from a financial, material, and environmental perspective. If products get too expensive, and/or if more material or other resources are required to manufacture them, MEPS can become counter-productive. As a general objective, the goal should always be to achieve the highest CO_2 emission savings at the lowest cost per tonne of CO_2 avoided.

➔ Recommendations:

- Ecodesign minimum requirements (MEPS) should always be set at the LLCC point to ensure affordability and, consequently, the broad uptake of energy efficient products in each market. The LLCC point will therefore never represent the best available technology (BAT). The latter, however, can be reflected by an energy label where the BAT would represent the best category of products represented on the label. The best non-available technology (BNAT) provides a long-term vision for future MEPS, for example in the context of a review of the Ecodesign measure.

- To develop the LLCC, a thorough market analysis needs to be included in the MEPS methodology to ensure the use of latest, up to date information from industry and research institutes about standard (Base Case), best available (BAT) and best non-available technologies (BNAT).

- The LLCC also needs to include an analysis about consumer behaviour and key economic factors for the region or country where the MEPS will be adopted.

- Plan for a regular review of MEPS to ensure they are set at the LLCC point. The periodicity of the review depends on the type of products regulated and their innovation and the product development cycle. Some products, such as fast-moving consumer goods, have a very short innovation cycle and require shorter intervals for reviews, whereas other goods will require longer intervals because innovation and product development cycles take more time.

- When reviewing MEPS, ensure that market changes are properly reflected, as the base case (BC) for a given product group will have evolved due to the first Ecodesign measure.

LESSON 4

MEPS should always target the final product level and be well-aligned with each other

As mentioned in the introduction, there are currently 31 Ecodesign measures and 15 energy labelling measures in force in the EU. Generally speaking, the EU follows a product-based approach.

However, in some cases, Ecodesign measures also apply to components that are incorporated into products that are themselves covered by Ecodesign requirements. This is the case for fans, motors, and circulators. Such a practice leads to a degree of sub-optimisation which could jeopardise its ability to achieve higher energy savings, restricts the freedom of manufacturers to innovate, and is difficult, if not impossible, to enforce in terms of market surveillance. In the same vein, applying Ecodesign requirements to spare parts is not in line with the spirit of Ecodesign to use energy and resources efficiently – reparability is important.

The case is similar for products that can fulfil several functions – so called multi-functionals – such as heating and cooling functions, as overlaps between different regulations should be avoided.

➔ Recommendations:

- MEPS work best when set at product level: this is where energy savings are the highest and where the LLCC is most meaningful, as customers normally purchase the final product.

- A highly efficient component does not, by default, result in a highly efficient product. Total product efficiency depends on many design factors and their interplay. This comes down to the expertise of each manufacturer and fosters innovation and competition. Therefore, components, when incorporated into a product that is already covered by Ecodesign requirements, should not be subject to MEPS.

- Applying Ecodesign requirements (MEPS) to spare parts could contradict the principle of resource efficiency as, due to periodic changes of MEPS, the spare parts may no longer be suitable. In other words, the product would no longer be reparable. In addition to a significant cost increase for users and manufacturers, it would lead to additional waste generation since the lifetime of equipment would be reduced due to the increased likelihood of product failure and/or the greater difficulty for manufacturers to estimate the quantity of spare parts required. Spare parts should therefore always be exempt from Ecodesign requirements.

- Products that can fulfil several functions, such as heat pumps that can provide heating and cooling, should be covered by one single Ecodesign measure in order to avoid confusion.

LESSON 5

MEPS should always be consistent with other legislation

Heating and cooling can make a significant contribution to reducing greenhouse gas emissions via the efficient use of energy and resources and the refrigerant transition.

Legislation dedicated to the transition to lower the global warming potential (GWP) of refrigerants and legislation dedicated to reducing energy consumption should therefore be well-aligned and mutually consistent, without being mixed up with each other. For example, in the EU, for certain product groups a bonus system exists which allows for a reduction of MEPS if certain low GWP refrigerants are used. Such bonus principles undermine the purpose of MEPS which aim to achieve energy savings and can therefore be counterproductive. Besides, it gives the perception that low GWP refrigerants by definition have a low performance. In the same vein, alignment between buildings-related legislation, such as the Energy Performance of Buildings Directive (EPBD) in Europe, and product-related MEPS (Ecodesign) is crucial.

→ Recommendations:

- When designing measures in view of the transition to lower global warming potential (GWP) refrigerants, the need for refrigerants that allow for higher energy efficiency should always be considered. In this context, it is important to note that there can be an interaction between efficiency and refrigerant safety standards: efficiency requirements are closely related to the refrigerant charge size. In the case of flammable refrigerants, however, the charge size may be limited due to safety reasons, therefore putting a "cap" on the achievable efficiency with certain refrigerant types. In addition, building codes need to be aligned to allow for the use of flammable refrigerants.

- Policy measures targeting refrigerants and policy measures targeting MEPS should not be mixed up with each other, such as by watering down requirements for the one or the other, for example by using bonus or malus schemes. The objective should always be the best possible result in terms of energy savings and refrigerant transition.

- Besides MEPS for products, setting energy efficiency requirements for buildings plays a key role in reducing greenhouse gas emissions. While an overlap between MEPS and building requirements should always be avoided, the use of more efficient products should be taken into account when calculating the energy efficiency of buildings.

- Synergies between regulations should be facilitated. For example, product-related information requirements should include data that are necessary for building-related purposes. Vice-versa, building-related requirements should build on product-related data. Local regulators should refrain from adding additional layers of complexity by setting performance requirements on data points that differ from MEPS-related requirements.

LESSON 6

The Energy Label works best for "off-the-shelf" products", complementing MEPS

In the EU, certain product groups are covered by both Ecodesign (MEPS) and Energy Labelling requirements (e.g. small air-conditioners, light bulbs, televisions, dishwashers etc.), some are only covered by MEPS (e.g. larger air heating and cooling products), and some are only covered by Energy Labels (e.g. tyres). This is due to the fact that energy labels make most sense for "off-the-shelf" or "plug-in" products which are directly sold to the consumer who may not be aware of the importance of energy efficiency and needs to be motivated ("pulled") to invest in a more energy efficient product. The EU Energy Label has been in place since the 1990s, was recently revised, and has generally proven very effective in achieving this goal. However, an energy label makes less or no sense in case of B2B products, where product specifications and contracts between supplier and customer are more complex and where energy efficiency depends on a range of factors (sizing, controls, monitoring, integration into a wider system) which cannot be covered by a simple energy label.

➔ Recommendations:

• In recent decades energy labels have proven successful in pulling consumers towards more efficient products. Typically, the highest class of the energy label reflects the best available technology (BAT), in other words when operational energy savings are the highest, but also come with a higher purchase cost (see also Lesson 3).

• As is the case for MEPS, energy labels should be determined as part of a solid, transparent methodology, assessing markets and latest technology developments, and involving all relevant stakeholders (see also Lessons 1, 2, 3).

• Energy labels are a useful complement to MEPS in case of mass-produced, "off-the-shelf" or "plug-in" products, which are directly sold to the consumer.

LESSON 7

Enforcement is key to protect consumers, ensure a level playing field, and reach energy and climate goals

Market surveillance is essential in ensuring that products on the EU market are compliant with existing legislation. It is key to create a level playing field for economic operators, ensure that investments by industry are secured, and protect European consumers from products which are either dangerous or misleading in their description and performance. Finally, only by complying with legislation can policy goals such as climate and energy efficiency objectives be met. This also applies to Ecodesign and energy labelling measures.

In the EU, market surveillance falls under the authority of EU Member States, where each Member State and sometimes each region within a Member State has its own Market Surveillance Authority (MSA) which is supposed to check relevant documentation and test the compliance of products. In practice however, MSAs often lack the necessary financial and human resources to carry out these tasks, and information is not systematically shared between different jurisdictions. A new EU Market Surveillance Regulation aims to address these shortcomings by introducing a strong focus on pan-European cooperation between MSAs and testing facilities to enhance laboratory capacity for MSAs.

➔ Recommendations:

- Ecodesign requirements should always be based on measurable, verifiable, and enforceable parameters to ensure that MSAs can verify the conformity of the product with the requirements of the Ecodesign measure in a proportionate, practical, and technically defensible way.

- Cooperation across different jurisdictions is essential to ensure enforcement of Ecodesign requirements and to prevent environmental dumping. Tools to improve such cooperation can be specifically created structures bringing together MSAs from different regions/countries to share information and develop coordinated action across regions/countries, secured databases for MSAs, product-related focus groups, and joint test facilities. In this way, limited resources can be used more efficiently.

- As strong supporters of enforcement measures to ensure a level playing field and fair competition between all manufacturers, product manufacturers bring substantial expertise which can benefit MSAs. Mutual trust and cooperation between industry and MSAs is therefore an important element for success, for example via dedicated fora and channels.

V. CONCLUSIONS

MEPS are undeniably an important driver to reduce energy demand and related greenhouse gas emissions. Over 70 countries in the world have already adopted MEPS for various product groups, and more are still to come. However, MEPS are only one piece of the "energy jigsaw", and governments who exclusively focus on MEPS miss out on other crucial aspects that can either generate substantial additional savings or, in the worst case, cancel out the savings from MEPS if not properly taken into account.

In terms of heating and cooling, at product level, examples for such aspects include the adequate sizing of equipment, regular service and maintenance, control, and monitoring. Beyond the mere product level, the EU's Clean Energy Package and initiatives such as the new "Energy System Integration Initiative" and "Renovation Wave" under the umbrella of the European Green Deal demonstrate the importance of looking at the bigger picture and taking an integrated approach rather than focusing all efforts at product level only. Again, heating and cooling can significantly contribute and facilitate the energy transition via thermal energy use and storage, demand side flexibility, energy efficient electrification of heating and cooling, and centralised and decentralised solutions, amongst others. For more information on the important role of heating and cooling for the energy transition, please see **www.countoncooling.eu** and EPEE's White Paper with **"five steps to deliver sustainable cooling"**.[4]

[4] http://countoncooling.eu/index.php/a-5-step-approach-to-sustainable-cooling/

EPEE

The voice of the heating,
cooling and refrigeration industry

ABOUT EPEE

The European Partnership for Energy and the Environment (EPEE) represents the refrigeration, air-conditioning, and heat pump industry in Europe. Founded in the year 2000, EPEE's membership is composed of over 50 member companies, national and international associations from three continents (Europe, North America, Asia).

EPEE member companies realize a turnover of over 30 billion Euros, employ more than 200,000 people in Europe and also create indirect employment through a vast network of small and medium-sized enterprises such as contractors who install, service and maintain equipment.

EPEE member companies have manufacturing sites and research and development facilities across the EU, which innovate for the global market.

As an expert association, EPEE is supporting safe, environmentally, and economically viable technologies with the objective of promoting a better understanding of the sector in the EU and contributing to the development of effective European policies.

As part of the activities EPEE and its members are undertaking to raise awareness on sustainable cooling, EPEE has launched a broader **#CountOnCooling campaign**. The **EPEE White Paper** "Count on Cooling: A five-step approach to deliver sustainable cooling" examines the crucial role of cooling in the 21st century.

For more information please see our websites **www.epeeglobal.org** and **www.countoncooling.eu**

EPEE

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cooling and refrigeration industry

ANY OTHER QUESTIONS?

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