

Position on the review of Ecodesign and Energy Labelling for air-to-air heat pumps and air conditioners (ENER Lot 10)

12 April 2023

EXECUTIVE SUMMARY AND RECOMMENDATIONS

The European Commission is reviewing ecodesign and energy labelling requirements for air-to-air heat pumps, air conditioners, and comfort fans (ENER Lot 10). EPEE, the voice of the air conditioning, heat pump, and refrigeration industry in Europe, supports the EU ecodesign and energy labelling policies and agrees with the need to keep the legislation up-to-date and in line with the latest technological developments.

This paper provides EPEE's position on the most recent proposals from the Commission on the review of ENER Lot 10 following the Consultation Forum of 7 March 2023. EPEE welcomes much of the proposed changes. However, we still have a few concerns.

Thus, we would like to raise the following observations:

- 1. Consider impacts of F-gas and PFAS restrictions on the energy efficiency**
- 2. Apply airflow requirements only during testing**
- 3. Reduce the control correction weight to 0.1**
- 4. Strong support for the proposal to merge energy labels**
- 5. Ensure sufficient granularity in the energy label for air-to-air heat pumps and air conditioners to enable optimal energy efficiency savings**
- 6. Resource efficiency requirement should consider a delivery time of spare parts of 15 days, should limit the availability to professional repairers, clarify competence requirements, and highlight the need to use specialist tools**
- 7. Reinstate sound rating conditions in line with the current regulation**
- 8. Support for a fixed bivalent point for average climate**
- 9. Include information requirements respecting the functioning of the single market for cold climate applications**
- 10. Support for the introduction of CVP**
- 11. Correct the requirements for standby and off mode for portable ACs**
- 12. Filter cleaning requirements to consider all products**

Introduction

EPEE, the voice of the air conditioning, heat pump, and refrigeration industry in Europe, welcomes the opportunity to provide comments on the ENER Lot 10 ecodesign and energy labelling proposals. We welcome the Commission's consideration of the industry comments following the 7 March 2023 Consultation Forum meeting, and we support the need for reviewing rules in line with the latest technological and market developments.

Nonetheless, we believe that certain aspects could be further optimised. Please see our recommendations with further explanation below.

EPEE recommendations

1. Consider impact of F-gas and PFAS restrictions on the energy efficiency

Due to the upcoming prohibitions concerning the use of F-gas and PFAS, EPEE would like to highlight that important restrictions are expected on certain types of refrigerants. In view of this, the currently proposed energy efficiency requirements need to be carefully considered. We are especially concerned that, due to restriction in refrigerant choices, current MEPS may be difficult or even unfeasible to meet, depending on the type of product, which may lead to increased costs to achieve similar efficiencies. This transition to alternative refrigerants may in turn lead to important efficiency losses by transitioning to alternative refrigerants, either within the product range or moving to other concepts of products and technologies serving the same purpose of heating and cooling.

We therefore urge the Commission to consider thoroughly the impact of other legislations on Ecodesign and energy labelling for split air-conditioners/heat pumps, including a consultation of DG ENER with DG CLIMA to assess the impact of the F-gas and PFAS restrictions in a proper way, or consider ways to postpone the implementation time of the proposed efficiency requirements to a later stage. EPEE is open to discuss this item further bilaterally with relevant and interested parties.

2. Apply airflow requirements only during testing

We welcome the principle to consider the airflow limit to ensure better consideration of comfort during testing. However, the requirement should not be a functional requirement, but a testing requirement defined in Annex III.8). Thus, we strongly suggest moving this requirement to the testing part of the proposal and out of the functional requirement. It should be avoided that AFR are limited during the operations of the unit, not to create discomfort for consumers or jeopardize safe and optimize operation of the equipment.

- The requirements should not be considered as a general requirement that the airflow is limited in all conditions during actual operation of the unit.
- The airflow limit should be applied as currently described in Annex II.8) in point A in cooling and point A or F in heating for average climate.
- For multi-split units, the maximum airflow limit of all indoors units together shall only apply where the capacity ratio is 1:1.

Currently, TC113 WG7 is setting up the test methods for airflow measurement in a calorimeter room during the thermal performance test. As such, EPEE recommends to carefully consider the development of airflow measurement for the calorimeter room method, and such testing methods should be fit for any EU test facility.

3. Reduce the control correction weight to 0.1

Under the current proposal, the control factor penalty has been increased from 0.1 to 0.25. It assumes that such controls may influence our efficiency up to 25% and that is quite a large influence given that our products have high seasonal efficiency, which may not be the case for other products used for heating for which a 0.25 penalty has a much lower influence on the overall efficiency. Therefore, we would propose to consider different total control factor penalties and features tailored to each product group specificities that still allow for establishing a merged label, at the same time. Since data is lacking to either support it or deny this, we are concerned of misleading our customers with an aspect that may not have such a big influence after all and diluting the importance of product actual efficiency. Furthermore, we believe that some of the proposed features are neither not very relevant for air conditioning/HP products, have very limited impact, or will be very difficult to verify due to a lack of standards and testing method (a simple document verification is not sufficient). As such, we would support a reduction of the control factor and a limitation of the control features, if it does not impair further deploying the merged label. In that sense, 0.1 is preferred, and we suggest limiting the features to those that are most relevant for RAC/HP with highest saving potential and “proportionally” adjust the correction factors currently applied in the proposed calculation.

We also would like to share further observations:

- Clarification is needed on how to consider controls when issuing the product label. It is not clear as to how the labels will be handled in case some of optional controls that are provided as extra feature and upon end-user request. This would also conflict with the EPREL database declaration, as the product must be registered as different model.
- Verification of controls should be further clarified and strengthened. The current requirement to check manuals and self-declarations allows for loopholes and needs to be better defined.
- Certain types of controllers need further clarification on their actual application and on their delivery with the product, i.e., open window detection, distance control option, self-learning and control accuracy.

- Definitions must be adapted to both cooling and heating; in the current proposal some definitions are limited to heating only.

Proposal for control options, reduced to 0.1

Commission proposal		EPEE proposal																																																	
<i>Equation 1</i>		<i>Equation 1</i>																																																	
$\eta_c = \frac{SEER}{CC} * \left(0.75 + \sum_i^{xii} F_{corr} \right)$		$\eta_c = \frac{SEER}{CC} * \left(0.9 + \sum_i^{xii} F_{corr} \right)$																																																	
	<table border="1"> <thead> <tr> <th>control options</th> <th>correction</th> </tr> </thead> <tbody> <tr><td>electronic room temperature control</td><td>0.050</td></tr> <tr><td>electronic room temperature control day timer</td><td>0.075</td></tr> <tr><td>electronic room temperature control week timer</td><td>0.100</td></tr> <tr><td>room temp control with presence sensor</td><td>0.025</td></tr> <tr><td>room temp control with open window det.</td><td>0.025</td></tr> <tr><td>distance control option</td><td>0.025</td></tr> <tr><td>adaptive start control</td><td>0.025</td></tr> <tr><td>working time limiter</td><td>0.025</td></tr> <tr><td>black bulb sensor</td><td>-</td></tr> <tr><td>self learning functionality</td><td>0.013</td></tr> <tr><td>control accuracy</td><td>0.013</td></tr> </tbody> </table>	control options	correction	electronic room temperature control	0.050	electronic room temperature control day timer	0.075	electronic room temperature control week timer	0.100	room temp control with presence sensor	0.025	room temp control with open window det.	0.025	distance control option	0.025	adaptive start control	0.025	working time limiter	0.025	black bulb sensor	-	self learning functionality	0.013	control accuracy	0.013		<table border="1"> <thead> <tr> <th>control options</th> <th>correction</th> </tr> </thead> <tbody> <tr><td>electronic room temperature control</td><td>0.050</td></tr> <tr><td>programmable electronic room temperature control</td><td>0.075</td></tr> <tr><td>electronic room temperature control week timer</td><td>-</td></tr> <tr><td>room temp control with presence sensor</td><td>0.00625</td></tr> <tr><td>room temp control with open window det.</td><td>-</td></tr> <tr><td>distance control option</td><td>0.00625</td></tr> <tr><td>adaptive start control</td><td>0.00625</td></tr> <tr><td>working time limiter</td><td>0.00625</td></tr> <tr><td>black bulb sensor</td><td>-</td></tr> <tr><td>self learning functionality</td><td>-</td></tr> <tr><td>control accuracy</td><td>-</td></tr> </tbody> </table>	control options	correction	electronic room temperature control	0.050	programmable electronic room temperature control	0.075	electronic room temperature control week timer	-	room temp control with presence sensor	0.00625	room temp control with open window det.	-	distance control option	0.00625	adaptive start control	0.00625	working time limiter	0.00625	black bulb sensor	-	self learning functionality	-	control accuracy	-
control options	correction																																																		
electronic room temperature control	0.050																																																		
electronic room temperature control day timer	0.075																																																		
electronic room temperature control week timer	0.100																																																		
room temp control with presence sensor	0.025																																																		
room temp control with open window det.	0.025																																																		
distance control option	0.025																																																		
adaptive start control	0.025																																																		
working time limiter	0.025																																																		
black bulb sensor	-																																																		
self learning functionality	0.013																																																		
control accuracy	0.013																																																		
control options	correction																																																		
electronic room temperature control	0.050																																																		
programmable electronic room temperature control	0.075																																																		
electronic room temperature control week timer	-																																																		
room temp control with presence sensor	0.00625																																																		
room temp control with open window det.	-																																																		
distance control option	0.00625																																																		
adaptive start control	0.00625																																																		
working time limiter	0.00625																																																		
black bulb sensor	-																																																		
self learning functionality	-																																																		
control accuracy	-																																																		

Our proposal should be considered with the following observations:

- The temperature control is generally differentiated between ‘programmable’ and ‘non-programmable’. However, there are already day and week timers integrated in programmable temperature controls; we believe there is no real need to differentiate.
- Additionally, ‘window detection’ is not relevant to be accounted for as it is already a general practice by consumers to turn off heating or cooling devices while opening windows, especially in current times of energy savings. This feature is generally applied in commercial environments only. Furthermore, it highly depends on the space to be conditioned as multiple windows may be present in the room to control as well.
- Self-learning functionality and control accuracy are difficult to verify in practice; thus, we propose their deletion.

4. Strong support for the proposal to merge energy labels

EPEE supports the merge of the energy labels for local space heaters (ENER Lot 20) and products under ENER Lot 10. The Commission’s Consumer Study presented at the Consultation Forum clearly indicated that this step contributes significantly to achieving the EU’s heating decarbonisation objectives. Moreover, the proposal fosters simplicity and easy-to-read energy labels. The merger, emphasising one scale when comparing different technologies that deliver the same function, improves the provisions of information to consumers, enabling them to make the most efficient heating/cooling decision, which helps delivering the objectives from the EU Green Deal.

Air-to-air heat pumps are increasingly used as a heating system to replace electric (Joule-effect) space heaters in several countries. Similarly, portable and double duct air conditioners are often considered and marketed as an equivalent solution to a split air conditioner. For these

reasons and in those cases, the consumers should be made fully aware of the significant efficiency gap between these technologies.

In addition, we strongly believe that one single label layout for all heating products and one scale for all cooling products help consumers choose the most efficient technologies to heat or cool their home by ensuring direct comparability across different solutions. EPEE fully endorses the label layout proposed by the Commission at the Consultation Forum as it introduces a visual efficiency scale, which allows for good comparison between different technologies for the same application.

5. Ensure sufficient granularity in the energy label for air-to-air heat pumps and air conditioners to enable optimal energy efficiency savings

EPEE believes that further differentiation should be ensured for higher efficiency products. The current proposal for class C (too wide) and the very low penetration rate for class B might reduce the appeal for innovation and competition and to ensure the pull effect of labeling. The current proposal condenses most of these products in class C with little differentiation from much less efficient products (up to three times less efficient). Additionally, as indicated in the first point, the level of currently achieved efficiency will be highly challenged with upcoming restriction and limited refrigerant choices which will further result on an almost empty class B and most of the market stagnating in the lower end of class C.

6. Resource efficiency requirement:

6.1. Maintain spare part delivery time to 15 working days

EPEE urges the Commission to adapt the spare part delivery time of 10 working days to 15 working days, as initially proposed in previous years. We suggest aligning with spare part delivery time of similar ecodesign products groups (e.g., washing machine, dishwashers, fridges, etc.). The repair and maintenance of air conditioners must be performed by certified installers, specifically for those components that require breaking into the refrigerant circuit. As such, the supply time of components will depend on the availability of these installers. An important aspect to consider is also the seasonality of certain products, impacting spare part availability and the wide geographical area to be covered (including islands, remote locations).

6.2. Limit certain spare parts availability to professional repairers

In order to ensure the safety during repair, we recommend limiting spare parts availability for end users to wireless remote controllers and filters only. Other spare parts, such as grilles, shutters, flaps, louvers, wired thermostats, and wired remote controls, shall be included under the list for professional repairers only.

Not all spare parts as prescribed in the spare part list can be supplied to end-users, as some of the parts described require technical knowledge when changing the parts and when opening of the unit and interaction with the electronic circuit can be required. In that regard, the safety of the end-user is not guaranteed.

6.3. Competence of professional repairers

To ensure safety and proper repair of products, a verification process for the purchase of listed spare parts should be defined. This verification process is intended to confirm that professional repairers have the technical competence to repair the relevant product. Moreover, this should foster compliance with the applicable regulations for repairers in the Member States and ensure that they are covered by insurance covering liabilities resulting from their activities. For example, adding the following sentence would be an idea: "(x) the availability of spare parts listed in (a)(i) may be limited to professional repairers registered in accordance with (d)".

6.4. Limiting access to professional repairers requires need for specialist tools

The draft specifies that components and materials can be removed with the use of commonly available tools. It shall be noted that for our product group some components, such as heat exchangers, cannot be removed by simple tools and require specific instruments used by qualified personnel. Moreover, specific procedures are required to remove them from the unit in order to prevent leakage of refrigerant in the atmosphere and to mitigate potential safety risks in case of toxic and/or flammable refrigerants.

7. Reinstate sound rating conditions in line with the current regulation

The test point for sound in cooling and heating mode needs to be corrected. The current draft refers to the term "maximum cooling/heat output attainable". This term is not aligned with the current rating requirements and definition for rated capacity currently applied.

8. Support for a fixed bivalent point for average climate

During the Consultation Forum on the 7th of March, the Commission clarified that the bivalent point range will be limited between -7°C and -10°C. EPEE would like to re-confirm that we support a fixed bivalent point between -7°C and -10°C.

9. Include information requirements respecting the functioning of the single market for cold climate applications

The share of applications intended for cold climates on the market is significantly smaller compared to applications intended for average and/or warmer climates. We believe that an approach where it shall be stated that 'this appliance is not intended to be used for cold climates in Europe' is not in line with the free movement of goods principle in Europe as it sets

a limit to where the product can be used, albeit compliant with the Ecodesign Regulation. A suggested approach is to rather specify when a unit is intended for use under cold climates ('this appliance is intended to be used for cold climates in Europe'), instead of the opposite.

10. Support for the introduction of CVP

We are supportive of the Commission's proposal for the Controls Verification Procedure (CVP). The methodology is currently already used in Japan and the United States, with a proven track record. It also controls properly that products can achieve lower part loads as declared by the manufacturer.

11. Correct the requirements for standby and off mode for portable ACs

We fully support the Commission's clarification that the proposed standby and off mode requirement are intended for portable air conditioners and comfort fans. This is also in support of the current methodology for air conditioners and air-to-air heat pumps where stand-by and off-mode losses are integrated in SEER and SCOP.

12. Filter cleaning requirements to consider all products

EPEE believes it to be sufficient and an acceptable practice to inform the requirement for filter cleaning in the instruction manuals, as we use in general professional repairers to take care of our customers.

If in any case visual indication is to remain, then we find it necessary that the regulation should allow for the indication to be made possible either on the unit itself or via the remote control, or via other means, i.e., a distance control smart application. This allows for flexibility and use of different options from user side. For concealed ceiling units and concealed floor standing units, this is the only possible option. Also, for other wall-mounted units, the best position may be the remote control or smart application as this may be the location where the customer is mostly looking at.

ABOUT EPEE

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 as well as national and international associations from three continents (Europe, North America, Asia). With manufacturing sites and research and development facilities across the EU, which innovate for the global market, 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. Please see our website, <https://www.epeeglobal.org/>, for further information.