

EHPA position on the review on air conditioners appliances (Lot 10)



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Introductory note: EHPA would like to thank the study team for the work already carried out and welcome the opportunity given to comment on the options proposed in the draft reports and the Consultation Forum. Please find below EHPA’s comments on several options and recommendations made from the perspective of heat pumps.

1. MINIMUM ECODESIGN AND ENERGY LABELLING REQUIREMENTS

1.1. New energy efficiency classes air-to-air heat pumps and air-to-air conditioners

EHPA supports the EU Commission on using a conversion factor of 2.1, which is based on the findings in the review of the EED. It is clear that air conditioners are also competing with other heating systems and therefore has to be aligned with the other lots to allow comparison of the different technologies in heating application.

In cooling, the proposed label has a wide range in B class that will not create the push and pull effect for the most efficient products. There will be less competitiveness and challenges between manufacturers to increase the efficiency of the products.

EHPA would therefore propose a new label where:

- **B class will be reduced to have the best products of the market in the future;**
- **C class increased to include today’s best products and motivate manufacturers to move units under this class to B class;**
- **D class to begin with the minimum efficiency requirement.**

1.2. Increasing the energy efficiency requirements in heating impair uptake of renewable energy technologies

Any proposal should encourage the use of renewable energy and facilitate such technologies to enter the market. Increasing further requirements on heating will have the adverse effect as they are not balanced with other heating products having the same function.

During the Consultation Forum, it was requested by some stakeholders to increase the minimum efficiency requirements in heating compared to the European Commission's proposal.

The proposed minimum requirements for this review (183% \geq 6kW air to air HP) is very high compared to the other heating products that are in competition (110% High temperature air to water and 125% Low temperature air to water) and even more with conventional technologies such as fossil fuel boilers (86%). It is a given fact that heat pumps are more efficient but also more expensive. By increasing the efficiency requirements in heating, it will increase this gap and the intake on the market of these products will be hampered and consumers will be reluctant to choose the products.

Therefore, EHPA recommends not increasing requirements in heating and maintain the level set by the European Commission in its draft proposal.

1.3. Reducing sound power level requirements does not support efficiency

During the Consultation Forum, statements were raised that it was not possible to find a clear correlation between sound power and efficiency, and that therefore, it is warranted to reduce sound power requirements further in this draft regulation.

It is a known fact that sound power level and energy efficiency are linked:

- Reducing the sound power level by keeping the same energy efficiency and size of the unit will result on reducing the capacity. The cost per kilowatt is therefore increased.
- Reducing the sound power level by keeping the same capacity and size of the unit will result on reducing the energy efficiency. The cost per efficiency is therefore increased.
- Reducing the sound power level by keeping the same capacity and energy efficiency will result on increasing the size (due increase on heat exchanger surface and fan size). This will reduce the comfort level, reduce the resource efficiency and increase the price by making it not affordable.

The effect on these parameters by introducing requirements on sound power level and energy efficiency can be found in the study report. Between 2006 and 2016, units with high sound power level disappeared from the EU market as well as the lowest ones (Figure 25 and 26 of Task 2). This is due to the minimum efficiency requirements set by Ecodesign.

The conclusion from the study report is clear that reducing further the sound power level will not make possible to reach the higher efficiency levels. With the current regulation, by having requirements on energy efficiency and sound power level, a balance between the two are made when designing a product.

Depending on the installation site, sound power will be more (e.g. residential area), or less important (e.g. close to a highway). As energy efficiency and sound power are linked, it would not be wise to reduce sound power requirements on the product itself through ecodesign requirements, this would limit the energy efficiency also in areas where sound power is not so important.

Today, local legislations already limit the sound pressure levels depending on the location of installation. Where sound emissions exceed the limit set down in the local legislations, measures are taken on site (e.g. sound walls) which do not affect the energy efficiency of the product.

EHPA strongly recommends maintaining the sound power level requirements as set today in the current legislation. Indeed, it has been proven that reducing sound power level would impact negatively the energy efficiency of the products, cf. Task 6 of the study reports.

1.4. Maintain current lower power mode, including standby, requirements

For split units, low power modes (LPM) are already included in the seasonal energy efficiency calculations (SEER & SCOP) which are subjected to requirements.

We recommend maintaining this approach that fully encompass the energy consumption of low power modes. Setting maximum or caps values would mean a double obligation on low power modes, including standby. Double regulation should be avoided. This could also hamper the development of connected and energy-smart appliances

EHPA recommends not to include separate LPM requirement for split units, i.e. to maintain the current approach of including LPM requirements into SEER and SCOP calculations.

2. TIMING

2.1. Entry into force of the revision in 2022 (art. 9 ED Regulation + art. 10 and 11 EL Regulation)

Current forecasted timeline indicates that all legislative processes will be finalized in spring/fall in 2020, followed by an entry into force in 2022 (one year earlier compared to the initial timeline).

The study will take some time to evaluate what requirements will be set and to judge the impact on the efficiency values in the market.

Additionally, such timeline will give a very short time for stakeholder to prepare for the implementation: manufacturers to redesign products, harmonization to adapt existing standards and independent labs & MSA to familiarize with the new requirements and implement verification procedure.

EHPA urges the commission to maintain initial time implementation concluded in the preparatory study report. In other words, the entry into force of the requirements should take place at least two years after the publication date.

2.2. Missing date for the application of article 6 ED Regulation on circumvention

Article 10 of the ED Regulation establishes the dates for the entry into force and the application of the Regulation.

Under article 10 of the ED Regulation the date for the application of the article 6 ED Regulation on circumvention is missing. According to the wording of the proposal the date of application shall be different from the date of entry into force. Indeed, the second paragraph of article 10 of the ED Regulation reads as follow: "It shall apply from 1 January 2022. However, Article 6 shall apply from XXX".

EHPA requests for clarity in regard to the application date of the article 6 ED Regulation and the reasons why such date should be different from the entry into force date.

3. TOLERANCES (Annex IV ED Regulation, table 16 & Annex IX EL Regulation, table 17)

3.1. Change of tolerances

EHPA recommends not to decrease tolerances as proposed in the draft legislations and maintain existing tolerances.

As pointed out through the preparatory study report and EU test laboratories, tolerances should be fixed based on thorough assessment of expanded uncertainties, that includes repeatability and reproducibility components. Expanded uncertainties should be based on a round robin test, that is currently not available. In fact current experience indicates that even current uncertainties maybe difficult to respect with the existing expanded uncertainties.

Additionally, sufficient time is necessary for both industry and testing labs to implement such changes, otherwise integrity of declared data and verification could be at stake. Expanded uncertainties of the independent testing labs in Europe will be higher than the proposed tolerances.

Therefore, EHPA strongly recommend maintaining the current tolerances. If tolerances were to be reduced, this should be assessed by a thorough analysis of expanded uncertainties and round robin tests results analysis.

3.2. Zero tolerance for parameters not listed in the tolerance tables

Where the tolerance value is not specified for the values declared in the Table 14 and Table 16 of the current draft, it was proposed to consider zero tolerance.

To our understanding, it would be technically incorrect to apply zero tolerance. It can be understood that if a value is measured under several conditions, it is unlikely that the exact same value will be found if it is tested again. This is due to uncertainty and tolerance:

- Uncertainty is a “parameter, associated with the result of a measurement, that characterizes the dispersion of the values that could reasonably be attributed to the measurand.”
- Tolerance is a “permitted deviation between the declared value of a quantity and the measured value”.

Tolerance is set to consider the differences of measuring a value in separate laboratories. This means that a value declared and measured by a manufacturer and the one measured by MSA has by default a tolerance. Therefore, zero tolerance can only be applied if the measurement is conducted in the same laboratory but still the same value will never be gotten due to the uncertainty that applies to that value.

Furthermore, the value of the tolerance should consider the uncertainties of the different laboratories. The lower the uncertainty, the more accurate the laboratory is testing and the lower the tolerance is to be applied between different laboratories.

EHPA therefore suggests that:

- **All parameters listed in Table 14 and 16 have a valuable tolerance, or the uncertainties of harmonized standards shall apply (which is even lower than tolerance);**
- **We recommend that the following statements should be introduced again:**
 - **For sound power level: “The determined value shall not exceed the declared value by more than 2 dB(A).”**
 - **For off mode and standby power consumptions: “The determined value shall not exceed the declared value by more than 10 %.”**

- **MSA absorb the uncertainties of their measurement as manufacturers do it for their measurement.**

4. SOUND POWER LABEL

The EL Regulation proposal includes the introduction of sound power classes.

EHPA believes that these classes will not bring any added value but on the contrary, their introduction will only lead to confusion of consumer. There is a clear link between energy efficiency and sound power level (see point 1.3), and therefore improving one of them will lead to decrease of the other. Furthermore, the proposed thresholds may be irrelevant depending on the region or type of the installation.

Additionally, the study on consumer understanding of the energy label confirms that consumers do not understand well the sound classes. The labels are grouping units within a range of sound power, giving the impression that these are equally good, whilst the sound power may differ 5 dBA.

The clearest option for consumer before explanation is the one where only the dBA value (alternative 3 in the study report) is indicated (page 20 and 21 of the consumer study). Therefore, we recommend following the findings of the European Commission' study and maintain only the dBA values on the energy label.

Finally, as sensitivity to sound is quite different between individuals and regions and depending on installation (nursery house compared to a convenient store) we believe that the label with current thresholds will not bring any benefit. Consumers can compare sufficiently with the dB figures indicated within the existing label design.

EHPA strongly recommends removing the introduction of sound power level classes on the Energy Label. The current display of the sound pictogram with the dB level is enough.

5. RESOURCE EFFICIENCY INFORMATION REQUIREMENTS

5.1. Maximum delivery time of spare parts

During the Consultation Forum, it was remarked that the obligation to deliver spare parts within 15 days could be further clarified when it comes to its verification by market surveillances authorities.

Even though this clarification might not be necessary into the legislative text, this could be further considered into FAQ the Commission would release after the publication of the legislations. Indeed, delivery times are subject to unforeseen hazards that can be out of the control of manufacturers.

Therefore, when verifying compliance with such requirement, it could be more appropriate to verify compliance based on a cumulated case basis over a certain period of time, such as 12 months, during which a predetermined failure rate is applied. In other words, an reasonable and acceptable tolerance of failure of delivering the spare parts within the requested 15 working day.

5.2. Spare parts availability

During the Consultation Forum, some stakeholders requested to extend the period of spare parts availability from 7 years to more, i.e. 12 years.

EHPA would recommend maintaining the 7 years initially proposed by the European Commission for several reasons. It has to be reminded that even though air-conditioners do have a longer product life cycle than other goods, the energy efficiency of new air-conditioners placed on the market over the years is increasing, Therefore a balance should be found between repairing air-conditioners at length to the detriment of energy efficiency and energy efficiency improvements of newer products.

In addition, increasing the availability of spare parts for 5 more years, this will also increase the stocks to be kept by manufacturers. If those stocks are not ultimately used, this will create additional waste.

5.3. Interpretation of “common available tools”

For the purpose of dismantling for material recovery and recycling, it is asked that the materials and components referred to in Annex VII to Directive 2012/19/EU can be removed with the use of “commonly available tools”.

First of all, the definition of “commonly available tool” has to be clarified. Secondly, in that Annex VII, components such as mercury, asbestos and refrigerant are listed. Such components products have to be removed carefully with specific tools so that the person removing it is not injured and this it cannot be done by end consumer. In the current draft proposal, it is not specified that these products have to be removed by professionals.

Indeed, as this requirement is applicable for some white good products such as fridges, it is often believed that the same reasoning can be applied for air conditioners. We would like to stress that air conditioners are more complex products compared to white goods. The amount of refrigerant that is in a fridge is much more lower than what is present in an air conditioner (in average, 70g compared to 5kg). Due to flammability issues, a different treatment is applied (for example left threaded or right threaded connection) and allowing it to be removed with a commonly available tool is against basic safety.

EHPA recommends clarifying it in Annex II, 4.d.

5.4. Listing refrigerants as a spare part

Some stakeholders proposed during the Consultation that refrigerants should be made available as spare part by equipment manufacturers, as part of the list proposed into the draft legislation.

It has to be reminded that equipment manufacturers are not refrigerants manufacturers, therefore refrigerants initially used by equipment manufacturers are used to prefill pre-charged equipment, equipment that is then placed on the market. Installers are in charge of installing, servicing, maintaining, and refilling systems in case of repair, the refrigerant will come from the installers’ own gas supplier.

Therefore, EHPA questions the feasibility of such requirement, as it does not follow today’s value chain practices and would require important logistical and safety arrangements from manufacturers to satisfy such obligation.

6. MULTI SPLIT SYSTEMS

For the energy label and product information, there is no clarification for the multi split units compared to the current regulation.

EHPA recommends that:

- **For multi split appliances, the information requirement table (Table 1 of 206/2012) shall be provided at capacity ratio 1:1;**

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- **For air conditioners, a label must be provided for at least one combination of indoor and outdoor units at capacity ratio 1.**

Indeed, these clarifications need to remain to ensure a feasible requirement. It should be noted that if these conditions are not included, then following situation will occur:

- ⇒ For 1 outdoor unit several combinations are possible with indoor unit types. So in case of 1 outdoor unit more than one label needs to be supplied;
- ⇒ Indoor units can be used for different outdoor units, so there also more than 1 energy label should be supplied;
- ⇒ For multisplit systems, we can come to a situation where more than 600 000 combinations are to be provided;

In addition, we would like to note that the definition of “capacity ratio” has been modified compared to the current regulation.

EHPA requests to have the same definition, being: “‘capacity ratio’ means the ratio of the total declared cooling or heating capacity of all operating indoor units to the declared cooling or heating capacity of the outdoor unit at *standard rating conditions*”.

7. NEW TESTING METHODS

Under the proposed ED standardization request, the European Commission asks for the adoption of a standard including the method to determine the declared capacities, SEER/EER, SCOP/COP values and service values without the need of information from the manufacturer on the setting of the unit, by 2025.

During the Consultation Forum some stakeholders proposed more ambitious timing (2023) which will not be in line with the current standardization timing. The official timing from CEN should be considered when setting timelines for such drastic change in the standard which is at least 20 months. There is a need for a much deeper investigation of the feasibility of implementing the dynamic compensation method and the capability of the laboratories to use it for all products under the scope of the regulation. The conclusion of the BAM study itself identifies that there is a need for further discussion within the standardisation group and further investigation of the repeatability of the method through a Round Robin Test (RRT) which will take at least 1,5 years.

Furthermore, we would like to draw the attention on the fact that so far, the testing having been conducted with a calorimeter room only. Manufacturers also do use air enthalpy rooms to test their products, therefore it should be further investigated whether such a method is feasible in air enthalpy rooms. This has not been confirmed yet.

Finally, if any new testing method is considered, new requirements will need to be rec-considered in light of it.

During the Consultation Forum, it was identified that additional work is needed on test methods for split air conditioners due to several ideas from different stakeholders to improve the current test method.

EHPA supports the suggestion from the EU Commission to set up a technical working group on this subject. In this technical working group, we would like to emphasize on the importance of considering testing method that better reflects reality such as looking at the thermal comfort. As explained above, sufficient time should be provided in order to discuss and evaluate all the options that would be brought.

8. SCOPE OF LOT 10

8.1. Excluding ventilation supply air (heat source) units

Article 2 “Definitions” states that (1) ‘air-to-air air conditioner’ means a device that: (a) has an indoor side heat exchanger (evaporator), which extracts heat from the indoor air or ventilation supply air (heat source), by means of an air-moving device, either through ducting or directly from the cooled space; ...

The definition of “air-to-air air conditioner” is not clear and opens the door for multifunctional units being in the scope of Lot 10, and not in the scope of Lot 6. The clarification of the scope of multi-functional units (e.g. units that are able to ventilate, cool, heat and produce domestic hot water, integrated heat recovery on air and refrigerant sides) needs to avoid unclear or overlapping scopes in various regulations and double or triple regulation for certain products.

There are multiple types and architectures of multifunctional ventilation units. Among them, ventilation is the only common function. For that reason, in order to gather all the multifunctional units in a single regulation to enable a direct comparison among them, EHPA proposes to include these units in the revision of (EU) 1253/2014, and not in (EU) 206/2012. Including them in (EU) 1253/2014 will also allow to consider them independently on their capacity range (as EU 206/2012 is limited to 12kW).

EHPA suggests revising the definition of ‘air-to-air air conditioner’ as follows: a device that: (a) has an indoor side heat exchanger (evaporator), which extracts heat from the indoor air ~~or ventilation supply air (heat source)~~, by means of an air-moving device, either through ducting or directly from the cooled space.

8.2. Considerations about thermal comfort

The current draft is restricting the scope to thermal comfort, and this is different compared to the current regulation.

Restricting the scope to thermal comfort excludes effectively air to air conditioner and heat pump used for data centre cooling (close control units).

We agree that in the current stage, and since these units are already in scope today, the exemption is not appropriate.

However, the operating hours of these units are different than the ones sold for residential or commercial areas for human comfort. Furthermore, if new test methods would be applied (either considering comfort, or compensation method), consideration should be given to the way these units are used as this is quite different than those designed for human comfort:

- The operating hours are different;
- The indoor temperature is different;
- The airflows used are different.

As the energy consumption of such units are not negligible, EHPA recommends investigating these aspects during the next revision, in order to better assess the environmental impact of these units and define appropriate calculation methods, test conditions and Ecodesign requirements.