



EEB comments on the second draft criteria for the European Ecolabel for heat pump systems (20 March 2006 version)

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Comments on Procedure:

Criteria gaps: It is not conducive to a clear and transparent process that we reach the 3rd, and presumably final, AHWG and there are still significant scope issues open on the criteria proposed - for example on whether the product group is for heat pumps only or for heating and cooling systems. Unless further AHWG meetings are agreed, this will lead to dependence on post-AHWG discussions – often bilaterals – which are not so easy to track and react to, increasing the chance of last-minute developments that may not be satisfactory. Given the gaps in the criteria it would seem advisable that at least one or two further AHWG meetings are convened. These post-AHWG processes (or extended AHWG processes) also stretch the time and financial resources allocated to each criteria process leading to unsatisfactory ability to respond in an expert fashion to the developments.

A few changes have been made to the criteria since the first discussion draft. The most interesting changes are highlighted below. For more details please refer to the comments on each criterion on the following pages.

1. **Refrigerants** with a GWP-value up to 3,500 will be possible to use in Eco-labelled heat pumps. This is a major increase from the 1,900 proposed in the first draft. The new limit makes it possible to use also R410A, and thus the new limit seems to be an adaptation to the current heat pump market. EEB calls for the GWP-value to be set at a limit that drives the substitution of refrigerants in current products with refrigerants with a lower GWP. The aim of the ecolabel is to encourage environmental benefits through innovation, and therefore questions the almost doubling of the GWP-value level since the previous criteria draft.
2. It is suggested to put demands on the **COP** depending on in which climate zone the heat pump is to be used, which could be a good solution. However, the current strategy is to put demands on individual operating points, which leads to a many values to be determined. Also in another criterion it is suggested to put a demand on minimum seasonal efficiency. The seasonal efficiency is the interesting parameter here and we think it would be better to put demands on the seasonal efficiency only. If the demand on the seasonal efficiency is made correctly it is not necessary to have two different efficiency criteria. However, if using the seasonal efficiency as a criterion it must be clearly stated how it is to be determined.
3. A criterion for the **greenhouse gas impact per unit of useful heat** has been added to the criteria document as a result of the discussions of the second AHWG meeting. The current criteria suggest using a factor of 385 g CO₂ per kWh electricity used. EEB proposes that the total emissions from the heat pump installation must be less than 300 g CO₂ per kWh useful heat

On the draft EU Eco-label for heat pump systems criteria:

General comments

The criteria cover most of the important issues. However, the materials issue is very superficially treated and must be extended. Further, the criteria are at a preliminary stage with no specifications on efficiency levels etc and thus make it hard to make any in depth comments.

Detailed comments on individual articles and criteria

Article 1

Nothing is mentioned about heat pumps used for heating of domestic hot water. It needs to be clarified why that is not included in the criteria.

Criterion 2: Refrigerant

ODP = 0 is strongly supported by the EEB. As the criterion is written now only packaged units may use refrigerants with a GWP-value > 10. Split units and DX-systems will thus need to use natural refrigerants only.

Despite asking this throughout this AHWG process, it still remains to be clarified why there is no need to classify the refrigerant used in an indirect system using water or brine as heat transfer media?

Criterion 4: Coefficient of Performance

The suggested approach with minimum values on several operating points is not the most effective approach. If minimum values for separate operating points are to be used they should be the same as those in the relevant standard (EN 14511 in this case). Using the suggested operating points for setting minimum values necessitates unnecessary extra work in calculating the COPs for these points based on the test points used in EN 14511.

The test method to be used for gas-motor driven heat pumps must be specified.

To put criteria depending on climate is good as you can optimise the product for its intended use and do not have to bother about other areas of use. However, it is then necessary to follow up that the product is used as intended. Five climate zones as proposed in the criteria we find to be too many. Referring to figure 15 of the "Draft background report III", both zone 1 and zone 5 will contain only small parts of Europe. We suggest distributing the zones such that only three zones are used for Europe.

1. annual average outdoor temperature less than +5 °C
2. between +5 °C to +10 °C
3. between +10 °C to +18 °C

Criterion 5: The heat production efficiency

We interpret this criterion as aiming for a minimum value to the total efficiency of the heat pump system (including electric power production, heat pump and auxiliary heat sources), but the final criteria should not be open to interpretation therefore this point needs to be clarified before the final criteria are drafted. A Primary Energy Ratio of 2.5 is suggested to use for electricity, which is acceptable. If the sanitary hot water heating is included or not is not clear. It should be and it must be clearly stated so. What PER should be used for gas? That must be specified.

It can be a good solution to put a criterion on the total annual efficiency, as this is the parameter that should be maximised, the COPs at separate operating points is just a step on the way towards this criterion. If using this criterion, the criterion in paragraph 4 can be omitted from the criteria. But when putting a criterion based on the total efficiency it must be prescribed how this shall be calculated. Should it be calculated for the real installation or should it be calculated for a few typical buildings/installations? Further, this criterion on the total efficiency should be based on climate zones as the same heat pump will have different efficiencies depending on where it is installed.

Criterion 6: The greenhouse impact per kWh useful heat

It must be prescribed how to calculate the overall greenhouse impact from the heat pump system. In order to separate this criterion from criterion 5, the impact from possible refrigerant leakage must be included and then a calculation of TEWI must be performed. The criterion must specify exactly how this is to be calculated and the values of the input parameters.

Criterion 7: Design and materials

Nothing is stated about other materials than plastics used in heat pumps. The criteria should also address materials used or hazardous substances contained in them – e.g. electronic components. Issues could be the use of flame retardants (eg deca –BFR), paints and coatings etc (see Materials on page 56 in the background report “Towards criteria development for heat pumps within the European labelling scheme”). We also maintain, as we have said in the past, that foams used for insulation of domestic hot water tanks must also be treated in this criterion (if domestic hot water heating is to be included in the criteria).

Criterion 8: Competence

The drafting of this criterion currently assumes a very close link between producers and installers. If this is the case across Europe, or is easily achievable with credible and verifiable documentation, the criterion should require documentation by the ecolabel licence-holder, for verification by the awarding body.

Criterion 10: Information to the user

10.1: Detailed energy calculation

The last sentence in the last bullet stating “This adaptation shall also be carried out” needs an explanation or should be moved to another part of the criteria. As we interpret it, the actions needed for optimising the heating system in the house must be carried out. This is not information to the user; it is more demanding than that the user perform the suggested adaptation.

10.2: Installation and instructions manual

We think that information about how to change settings in the control systems should be included as well as a trouble-shooting scheme. These should of course specify which items can be changed by the owner and which items must be changed by the installer/retailer only. Reference is made to chapter 4.9.2 – that does not exist.

For questions and comments please contact

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