



**BEUC/EEB/INFORSE EUROPE COMMENTS
ON
EU ECOLABEL AND GPP CRITERIA FOR
HEATING SYSTEMS**

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1. Introduction

The EU Ecolabel Board is aiming to develop EU Ecolabel criteria for heating systems. In this paper, the European Consumer Organisation (BEUC), the European Environmental Bureau (EEB) and the International Network for Sustainable Energy (INFORSE Europe), are commenting on the following reports:

- *Background report including draft criteria proposal Working Document for First AHWG-Meeting for the development of ecological criteria for hydronic central heating systems.*
- *Development of European Ecolabel and Green Public Procurement Criteria for Hydronic Central Heating Systems - Draft Report- Product definition and scope Economic and market analysis- Technical analysis.*

The reports were produced by the Institute for Prospective Technological Studies (IPTS) at the JRC in June 2011 to assist the development of criteria for hydronic heating systems for the EU Ecolabel and for green public procurement (GPP).

2. Comments on the scope and methodology

We strongly believe that the criteria for an Ecolabel and GPP for heating systems should aim at a high energy efficiency and low air pollution as well as low emission of greenhouse gases, including low climate impacts of refrigerants and chemicals and resources use.

Regarding methodology, we recommend following as closely as possible the Ecodesign approach. The seasonal performance factor should be used in methodology, as it is done in Ecodesign lot 1, rather than the methodology used at present in the Ecolabel for heat pumps.

The current report mentions in the overview of components of heating systems a threshold for heat pumps 4-50 kW input power which excludes half of heat pumps. We propose therefore replacing the term "input" with "output".

3. Horizontal benchmarks for entire product group

We welcome the approach taken by the JRC to develop common benchmarks for different technologies that all deliver the same service (i.e. heating). Nevertheless, we would like to raise the following concerns.

The requirements on energy efficiency and CO₂ emissions discussed at the Ad Hoc Working Group meeting on heating system on 28th of June in Seville, allows setting ambitious requirements for biomass boilers and fossil fuel boilers but not for heat pumps. We propose that the Ecolabel will only be given for high-efficient heat pumps, and that criteria will be set for heat pumps that guarantee high energy efficiency. We suggest replacing the flawed¹ methodology used in the current Ecolabel for heat pumps.

¹ The current ecolabel for heat pumps uses too simple evaluation of the efficiency that does not take into account efficiencies at real working conditions with variations in heat source temperatures over the seasons. This does not give a good advice for the consumers.

As the JRC states in its report, other environmental (and health related) impact categories will have to be taken into account in the common benchmarking exercise. This will, for instance, include air pollution as one of the most important health related impacts. We are not convinced that having an approach of point system will secure environmental standards for all proposed products in this group.

Alternatively, mandatory thresholds for all environmental impacts could be developed that will have to be equally achieved by all heating systems. With this approach, it will be necessary to have different thresholds for different technologies. For example, biomass and CHP have higher emissions of NO_x, but lower CO₂ emissions.

Efficiency grades of some technologies change according to climatic zone

The efficiency of heat pumps and solar thermal technologies vary greatly in different climatic zones. According to the latest working documents on Ecodesign and energy labeling, implementing measures for heating equipment (boilers, Ecodesign lot 1), air source heat pumps and solar thermal heating placed on the EU market will have show different labels in different climatic zones. The EU is divided in three climate zones in this proposal (colder, average, warmer).

We understand the need of differentiation between climate zones, but the Ecolabel needs to avoid confusion among consumers. In order not to mislead European consumers, we propose visible and transparent information regarding differentiation between countries. The notice should indicate the countries for which the EU Ecolabel is awarded. For example, when the Ecolabel would be given to certain boilers, consumer should also be informed that this label is only valid for a certain climate zone, i.e. Finland, Norway, Sweden, Denmark, etc.. It will be important to mention clearly the countries in writing and not to show a map of Europe with different climate zones as is currently under discussion for the EU Energy Label for water heaters and boilers as we believe that this is not sufficiently clear to consumers.

The efficiency variation is an important aspect when different technologies are compared. For instance, in southern European countries heat pumps might be the most energy efficient hydronic heating system, while they are less efficient than other systems in northern European countries. This has two implications: 1) the different efficiency grades have to be taken into account in the comparison of different technologies and 2) differentiated GPP and Ecolabel criteria will have to be set for different climate zones.

4. Criteria related to energy efficiency

According to the Ecolabel Regulation, the Ecolabel should be given only to 10-20% best products in terms of environmental performance. Therefore, we suggest setting ambitious requirements on energy efficiency for biomass boilers.

We believe that efficiency criteria should be on the level allowing just the best biomass boilers to apply for the scheme. We propose minimum efficiency on the level of 75-80% with the Ecodesign methodology (BAT seems to have about 75-77% without controls and 80-82% with BAT controls, using Ecodesign lot 1 methodology). Energy efficiency threshold should be set in such way to allow consideration of gas boilers.

We support using the concept of “seasonal space heating energy efficiency” as developed by Ecodesign. However, in our view, Ecolabel as a label of environmental excellence has to go further than legal obligatory requirements.

5. Criteria on GHG emissions

In our view, greenhouse gas emissions limits should allow the best fossil (gas-fired) boilers to be awarded with EU Ecolabel. This could be achieved with a limit of 200 g/kWh output. It should be calculated with the Ecodesign lot 1 methodology for fuel and auxiliary electricity demand. In our view, this will limit Ecolabel to BAT gas boilers or the next best gas boilers with controls included. At the same time it will exclude oil boilers except, if they are supplemented with solar.

We propose TEWI²-type greenhouse gas emission limits for heat pumps only. The Ecolabel should be awarded only to the best 10-20% of heat pumps evaluated with this approach. The input Seasonal Performance Factor (SPF) should be calculated as in the Ecodesign lot 1 methodology.

6. Other criteria

Regarding NO_x limits, we propose introducing Blue Angel limit - 150 mg/Nm³. We recommend also making sure that the criteria will be set at the level of 10-20% of the best performing products with regard to NO_x emissions.

We propose level of dust emissions similarly to Blue Angel for biomass boilers.

Regarding organic air pollutants we propose approach of limiting organic compounds (OGC) or OGC and CO. We suggest following the Blue Angel criteria for CO. We also suggest considering setting criteria for VOC (Volatile organic compounds).

In our view, it is important that consumers should be informed about the noise level generated by each device. This information should be accessible to the consumer before purchasing the devices and relevant recommendations regarding installation places should be clearly stated. We propose to place those information on package of the device.

² The TEWI (Total Equivalent Warming Impact) takes into account the greenhouse warming effects of heat pumps from electricity use as well as from refrigerants. The requirements of the total warming impact can be set to allow only 10-20% of the heat pumps to be eligible for an ecolabel. That level might be lower than the limit of 200 g CO₂/kWh proposed for boilers.

7. Criteria related to design of materials

Firstly, we would like to state that we support proposed wording: preventing the use of hazardous substances and materials (such as PVC). The materials should not contain hazardous substances. Secondly, we do not see the reason to use article 6.7 of the Ecolabel Regulation and provide derogations. The Ecolabel Regulation EC 66/2010 states that the "substitution of hazardous substances by safer substances, as such or via the use of alternative materials or designs, should be considered wherever it is technically feasible". We recommend banning use of PVC and halogenated flame retardants.

Focusing on the inherent properties of single substances does not allow identifying all areas of concern which could occur during the whole lifecycle of a substance or a product such as the formation of hazardous degradation products in the environment, release of hazardous substances in incineration or inappropriate waste management, formation of hazardous substances during metabolism in the human body.

The related negative environmental and health problems of PVC and halogenated flame retardants are well known and their complete phase out has been recommended by many researchers. For instance, in a report commissioned by the European Commission, the Ökoinstitut made the following recommendations³.

On halogenated flame retardants:

"the group of organobromine and organochlorine substances have been considered in the present study and their phase out from EEE is highly recommended by the authors".

On PVC:

"The phase out of PVC should(...) have priority over selective risk management measures to guarantee a reduced release of PVC, of its additives and of hazardous combustion products".

Most of the scientific concerns towards brominated and chlorinated flame retardants are summarised in a consensus statement – the so called San Antonio Statement – signed by more than 210 scientists⁴. From our point of view, the concerns formulated in this statement justify the exclusion of all halogenated flame retardants.

Our concerns towards PVC are summarized a briefing prepared by Jacob Hartmann (2008) attached to this document⁵. The briefing highlights structural weaknesses of this material such as the unsolved waste problem, problems related to the leaching of hazardous additives, dioxin formation or the lack of appropriate collection and recycling schemes.

We propose that use of insulation materials with higher safety class than standard mineral wool must be clearly labelled (in some boilers are used ceramic fibres that have higher safety class than mineral wool).

Furthermore we propose establishing horizontal criteria for packaging.

³ http://ec.europa.eu/environment/waste/weee/pdf/hazardous_substances_report.pdf (page 179 and 196)

⁴ <http://www.greensciencepolicy.org/node/269>

⁵ <http://www.eeb.org/?LinkServID=1E1AA92E-99B2-AF72-684A0D07AFE9D10B&showMeta=0>

In our view, information should be made available for consumers that installation should be carried out by accredited installer. The information should be available before the purchase – in catalogues and sales materials (including the internet sites). Additionally such information could consist of a list of main accreditation schemes in Europe and their weblinks. We also consider it important to give information to consumers on proper usage of the equipment/ installation. It should be included in instructions delivered with a product (such as information booklet).

We propose that manufacturers give a warranty of five to ten years, as heating systems are long-living devices. The legal requirement is already two years, Ecolabel and GPP should present added value.

8. Solar heating

Solar heating systems are frequently combined with other heat sources to reduce fossil energy usage (fuel and electricity consumption). Therefore, we recommend Ecolabel for heating systems where solar heating is combined with other heating sources.

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