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# **Common Benchmark Ecolabel & GPP Criteria for Hydronic Central Heating Systems**

## **JRC IPTS Reply to Stakeholders' Comments**

Elena Rodriguez Vieitez, Oliver Wolf

December 2010

DRAFT - WORK IN PROGRESS

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# 1 SUMMARY

The aim of this document is to summarize the discussion and feedback on the proposal of IPTS to develop criteria for Ecolabel and GPP for hydronic heating systems. The proposal was presented at the EUEB meeting in Brussels October 20<sup>th</sup> and distributed to EUEB and GPP AB members via two documents: "Development of EU Ecolabel and GPP Criteria for Heating and Cooling Systems", which generally describes the area and potential classification of heating systems, and "Common Benchmark Ecolabel and GPP Criteria for Hydronic Central Heating Systems", which develops the proposal for the actual scope of the product group for Ecolabel and GPP criteria.

As the request for comments addressed both the EUEB and the GPP AB, in total around 100 organisations were contacted, which in turn distributed the request in the respective Member States or related organisations. As a "soft" deadline for replies, November 15<sup>th</sup> was determined in order to accelerate the discussion process. However, also replies received after this date were taken into account for this summary and analysis.

As the request for comments encouraged actively those respondents who wish to see the proposal modified or rejected as a whole, we understood those organisations which did not reply as supporters of the proposal in the context of this analysis.

We received comments from 13 stakeholders: 7 from member states, 5 from industry (including two consultancies on testing and standards for heating systems) or industry organizations, and 1 from non-governmental organizations.

The main aim of the stakeholders' consultation on the two documents, especially the scoping document with a proposal to develop a common benchmark for Ecolabel and GPP criteria for hydronic central heating systems was to collect opinions regarding the suitability of the scope of the study as defined. From the 13 answers, we obtained clear positive reply and approval of the scope from 8 stakeholders. We obtained a mixed opinion from 1 stakeholder, and overall opposition from 4 stakeholders.

From the stakeholders supporting the scope in terms of a common benchmark for central hydronic heating systems, the reasons in support were offered as:

- A common benchmark is very necessary as a method to provide a fair comparison between different heating systems, which will also provide useful information to the consumer in making an appropriate choice.
- Central hydronic heating systems are an appropriate product group because, as presented in the scoping document, they represent the largest environmental impact in the EU-27 not only in terms of energy consumption but also taking into account a number of environmental impact parameters, including CO<sub>2</sub> emissions, and other air emissions.

One comment was received which tentatively supports the proposal:

- In the opinion of the stakeholder offering mixed support for the proposal, the main concern comes from the GPP point of view. In the opinion of this expert, central heating systems are not easily defined, neither as a single product group nor as a service, because they have many different parts, and because they would need to be assessed together with the building.

From the stakeholders with diverging or opposed opinions regarding the scope definition, the main arguments for their position were:

- The common benchmark approach was tried before when the Ecodesign studies were started, and it did not succeed.
- The systems approach is claimed not to fit with the market reality. If the common benchmark approach is implemented, it will lead to market distortions and to the discrimination of certain heating systems technologies. In particular, it will lead to a discrimination in favor of packaged systems and against ad-hoc installed systems, which are claimed to be the most commonly installed in certain member states.
- The information content of common benchmark criteria is too low to be worthwhile.
- It is necessary to exclude some fuels from the start, in particular fossil fuels. Only renewable fuels should be taken into consideration from the start.

A number of comments were received which exceeded the discussion on the proposed scope of the product group and entered into methodological issues.

Regarding these very valuable methodological opinions and comments for improvement, very common positions expressed were as follows:

- A very common position is that it is necessary to always take into account the methodology of previous product policies such as Ecodesign, energy label, and the Energy Performance of Buildings Directive (EPBD), and to develop Ecolabel/GPP criteria in harmony with previous policy methodologies.
- It was a common statement that the heating system needs to be matched with the type of building where it is installed, as is done in the application of the EPBD. It is not possible to just compare heating systems alone, but a factor needs to be introduced to take into account what type of building the system is installed in.
- A very common comment was that the energy efficiency parameter alone is not sufficient to compare heating systems, but that other environmental impact parameters are important such as: CO<sub>2</sub> emissions, air emissions, etc.
- It was suggested to provide market surveys of companies that would be able to comply with the Ecolabel/GPP requirements
- Sometimes procurers are not able to choose between heating systems. In this case, some doubts have been expressed that the Ecolabel/GPP of a common benchmark could provide added value.
- It is necessary to take into account different climate zones, and it is suggested to follow the same methodology as was developed in Ecodesign (example for boilers and combi-boilers, Lot 1).
- It was commented that the performance of heating systems for a given technology could change because of the fuel mix in the particular member state used. However, a different opinion was also stated arguing that the EU grid is interconnected and therefore that the development of Ecolabel/GPP criteria does not need to account for differences in fuel mixes from country to country.
- It is necessary to provide data on improvement potentials. In this regard, we should also take into account the impact studies of existing Ecodesign implementing measures.

Other comments expressed by some stakeholders were:

- Regarding the suitability of heating systems for GPP, one of the stakeholders mentioned that heating systems are a product group that is suitable for both Ecolabel and GPP criteria, but especially for GPP criteria. Conversely, other stakeholders expressed that it is often the case that the consumer is not able to freely choose a given heating system because of constraints regarding the type of building, the budget, or the availability of certain systems in the particular region or member state (considered a problem both for individual purchasers in the case of Ecolabel, or the public purchaser in the case of GPP).

## **2 IPTS DISCUSSION OF THE DETAILED COMMENTS**

In the following the IPTS point of view regarding the received comments is discussed.

First, regarding the comments in support:

- We fully agree that a common benchmark that allows a fair comparison between different heating systems is valuable especially because it will provide useful information to the consumer to help making the most environmentally sound purchasing choice.
- Central hydronic heating systems were indeed proposed as a product group because they represent greater than 80% of the environmental impact of all types of heating systems in buildings in the EU.

Second, regarding the comment offering mixed support:

- We understand that the product group criteria should be developed in line with both Ecolabel and GPP goals. We believe that the definition of hydronic central heating systems might present some challenges, because it will encompass a number of technologies to accomplish the function of central heating of buildings using hot water to circulate the heat. Despite potentially challenging, a definition of hydronic



central heating systems is in our opinion still feasible; our position is also based on information gathered from existing Ecodesign studies of central heating systems. We will pay attention to the suggestion that the study of central heating systems needs to be conducted together with the building. In order to address this comment, we propose to study the potential inclusion of a factor that would take into account the relationship between the heating system and the type of building where the heating system is installed (as was suggested also by other experts).

In response to stakeholders with diverging opinions regarding the scope definition:

- First, it was expressed that the common benchmark approach was tried in Ecodesign studies and it did not succeed. We believe that it is technically feasible to develop a common benchmark approach to the Ecolabel/GPP criteria for hydronic central heating systems. Additional considerations that played a role in the decision not to develop a common benchmark for the Ecodesign studies will not necessarily be a factor in Ecolabel/GPP.
- The systems approach is claimed not to fit with the market reality, and a risk is perceived that the common benchmark approach could lead to market distortions and the discrimination in favor of commercially available packaged systems vs. ad-hoc installed systems (not available off-the-shelf). In this regard, the Ecolabel/GPP criteria need to address the current market, i.e. the products existing on the market. If products are not available for purchase in the market, then they are out of the scope of Ecolabel/GPP.
- It was expressed that the information content of common benchmark criteria is too low to be worthwhile. Our position is that, in order to effectively address the large impact that heating systems currently have in the EU (40% of the primary energy consumed in Europe is consumed in the heating and cooling of buildings), a combination of approaches and measures (mandatory and voluntary) will be needed. While mandatory measures mandating certain minimum performance of heating systems and energy performance of buildings might be seen as the most effective, the Ecolabel/GPP voluntary criteria will with no doubt provide valuable information to the consumers in their choice of the most environmentally sound heating systems, and

will contribute positively to the reduction of energy consumption and greenhouse gas emissions from heating of buildings in the EU.

- In the opinion of some stakeholders, the Ecolabel/GPP should not be awarded to fossil-fueled heating systems, and instead the development of Ecolabel/GPP criteria should focus on renewable fuels. Our position is that the development of the common benchmark study will not be necessarily in opposition to this comment. The study will provide data that will allow a fair comparison of different heating systems technologies employing different fuels. No technology or fuel will be excluded a priori from the analysis. However, as a result of the analysis, some technologies or fuels might be excluded on the basis of the scientific evidence from a life cycle analysis perspective collected during the study.

Below is our response to comments offering methodological suggestions:

- We agree that it is necessary and valuable to always take into account the methodology of previous product policies such as Ecodesign, energy label, and the Energy Performance of Buildings Directive, and to develop Ecolabel/GPP criteria in harmony with previous policy methodologies, and we will conduct our study in line with previous product policy studies. Past research and criteria development exercises have revealed rather broad methodological differences between Ecodesign (mandatory minimum standards) and Ecolabel (award to the best 20% performing products within a product group), which are mainly caused by the different aim and characteristics of the instruments. However, it goes without saying that existing research results are used to the maximum extent possible, and that increased coherence between the related policy instruments is sought.
- We welcome the suggestion of incorporating a factor to take into account the type of building the system is installed in, in order to address the concern that heating systems need to be matched to the type of buildings where they are installed.
- It was pointed out that the energy efficiency parameter alone is not sufficient to compare heating systems, but that other environmental impact parameters such as CO<sub>2</sub> and other air emissions need to be taken into account. Here there seems to be a misunderstanding. The scoping document mentioned that a number of environmental

impact parameters will be considered in the study, including the abovementioned. The scoping document focused a bit too much on energy efficiency, as an example of how to compare different heating systems. Perhaps it should have made more clear that the comparison will be done on the basis of a set of parameters.

- Market aspects will be part of the study, and we will incorporate market surveys of companies that would be able to comply with the Ecolabel/GPP requirements.
- We agree that the Ecolabel/GPP criteria will only be useful when the purchaser has a free choice over different systems. We believe that a substantial part of purchasers will have a free choice and therefore that it is worthwhile to develop Ecolabel/GPP criteria to steer these decisions towards the most environmentally sound alternatives.
- We will take into account different climate zones in the study, following the same methodology as was developed in Ecodesign (e.g. for boilers and combi-boilers).
- Regarding the comment on different fuel mixes in different member states, we agree with the experts suggesting that the EU grid is interconnected and therefore that the development of Ecolabel/GPP criteria does not need to take into account different fuel mixes.
- We will provide data on improvement potentials, and we will take into account impact studies of existing Ecodesign implementing measures.

Regarding further comments:

- The advantage of the scope as a fair comparison is especially important in GPP where the individuals taking the decision on behalf of a public organization are looking to select a heating service more than a specific type of heating product.

### **3 CONCLUSIONS**

From the comments received, 8 out of 12 experts expressed an overall support for the development of a common benchmark for hydronic central heating systems. Regarding the statements of the 4 stakeholders expressing significant concerns with the approach, we will take them into consideration and learn from previous work on common benchmark approach

undertaken in Ecodesign. We would like to point out that, even though the approach might not have worked perfectly for Ecodesign, we believe it is more suitable for Ecolabel, a related but not identical methodology to Ecodesign.

Regarding the comments supporting the exclusion of fossil fuels, we still think it is worthwhile to conduct a horizontal comparison of different technologies and fuels. On the basis of the evidence collected from the study, some technologies/fuels might be then excluded from Ecolabel criteria.

Finally, there seems to be a misunderstanding on the status and progress of the project. The scope document presented is very preliminary and mainly a concept to be developed. We were looking for early feedback from the stakeholders, and we will incorporate as many comments as we can in the study that we are undertaking.

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