



# CONSUMER RELEVANT ECO-DESIGN AND LABELLING REQUIREMENTS FOR BOILERS

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## Summary

This paper outlines the main consumer relevant issues related to the possible eco-design and labelling requirements for boilers (Lot 1) and recommends improvement options. The paper updates our previous comments regarding boilers which we submitted for the first Consultation Forum meeting on boilers in February 2009.

We ask the Commission to provide data on the efficiency of boilers based on the new calculation method in order to assess the ambition level of the measure.

Regarding the scope of the measure we welcome the inclusion of micro-cogeneration into the measure as these products are already on the market. We also ask to include boilers which are able to operate with 10% biofuels. As these appliances could also operate by using fossil fuels only, this would be a loophole. We also suggest setting Eco-design requirements for boilers with a maximum heat output below 3.5 kW.

On the definitions and measurement method we propose several changes.

We reiterate that it is important to set NO<sub>x</sub> and corresponding CO limit values in the Eco-design measure in order to avoid possible negative health effects on consumers.

We support the proposal to make third-party testing the rule for boilers.

We welcome the proposal to develop an interactive internet-tool which would provide information to consumers about the correct size of boilers. We propose however to include an option which would allow a comparison between upgrading an existing heating system with renewable energies compared to investing into a new boiler.

On the Energy Label, we raise concerns regarding the simplicity of the message as the information and pictograms are not self explanatory. Regarding the distribution of labelling classes, we propose setting the best available technology at the level of class "A".

## Introduction

This paper outlines the main consumer relevant issues related to the possible eco-design requirements for boilers (Lot 1) and recommends improvement options. We give specific, technical recommendations to increase the energy efficiency of these products and highlight the need for a well-designed labelling scheme to inform consumers.

The paper updates our previous comments regarding boilers which we submitted for the first consultation forum meeting in February 2009.

## General remarks

- ANEC and BEUC welcome the Commission proposal to introduce eco-design requirements for boilers. Central Heating Boilers (CH-Boilers) constitute one of the most relevant product groups covered by the EuP process due to their savings potential.
- Consumers will benefit from energy efficient boilers. However, the phasing out of inefficient and often cheap appliances could be a burden for certain consumer groups. Consumer organisations therefore call on the Commission to encourage Member States to provide accompanying measures such as subsidies and tax reductions.
- The working documents are very complex. We wonder if it would be possible to express the eco-design requirements in a simpler way. Such an easier description of the measure would be needed in order to allow all stakeholders to follow the process adequately.
- CH boilers are one component of a system that is comprised of a building and its heating installations. To optimize energy efficiency of the whole system, an integrated policy package is needed. Ecodesign and labelling measures need to be closely coordinated with the installation and inspection requirements of the Energy Efficiency of Buildings Directive and with policy initiatives at national level such as information campaigns, training of installers and green public procurement. Timing is crucial in order to ensure best coordination of Ecodesign and Energy Efficiency of Buildings Directive.

## Level of ambition and timing

It is difficult to assess the adequacy of the eco-design requirements as the figures based on the new calculation method are not comparable to the figures which are based on current standards. For better assessment, we ask the Commission and manufacturers to provide data which would allow comparing the energy efficiency levels based on the old and new calculation method. In addition we ask for an overview showing which products would be phased out and which appliances would remain on the market.

However, the minimum requirements which have been proposed for small and medium size boilers for the year 2011 are hardly more demanding than the base case<sup>1</sup>. We are therefore disappointed that in addition to low requirements for the first stage, the energy efficiency requirements for the second step (2013) have been considerably lowered. Compared to the working document from February 2008, the requirements have been dropped from 76% to 64% efficiency. We do not support a less ambitious approach for boilers as ambitious eco-design requirements are needed in order to phase out the least efficient products from the market.

We therefore propose introducing the values which are foreseen for 2013 already in 2011.

Additional requirements for boilers above 70 kW are supported as related costs will be shared among many consumers and the overall performance will be improved.

## Scope of the measure

- Boilers which are able to operate with 10% biofuels are excluded from the scope. However, as these appliances could also operate by using fossil fuels only, this is a loophole. Therefore we ask to include boilers and combi-boilers which are designed to use partly or entirely biofuels into the Eco-design measure and the labelling scheme. Exempting boiler which operates with biofuels would only be justified if the boiler would be unable to function with fossil fuels.
- The inclusion of micro-cogeneration into the measure is supported as these products are already on the market. Minimum standards are necessary in order to avoid that consumers buy products which are not very sophisticated. Adequate measurement methods need to be developed in parallel to implementing the measure.
- Boilers with a maximum heat output below 3.5 kW should be included as it is unclear why no minimum energy efficiency requirements should apply to those small boilers. In case the boilers will be covered by another lot, we propose to clarify this in the scope of the implementing measure.

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<sup>1</sup> Base case is 54% and minimum requirement is 56%.

## Definitions

- We propose to define the load profile in document 2, chapter 2, number 11 in more detail or to refer to document 4, number 4.
- In document 2, chapter 2, number 21 we propose changing the ambient temperature from 20 to 15 C as often cylinders are placed into the cellar. Thus, the ambient temperature has to be assumed at a lower level in order to determine heat losses correctly.

## Calculation of energy efficiency

- It is difficult to assess the appropriateness of the proposed energy-efficiency requirements as there is currently no consensus about the calculation model. In addition, no data based on the new calculation model have been made available to consumer organisations.
- The added value of a night set back function seems to be exaggerated in the measurement formula as the savings from this function are lower for well isolated houses.
- We noted that the calculation method covers only standby losses during the heating period. However, the calculation method for Lot 10 (room air conditioning appliances) takes into account standby losses based on the whole year. We therefore suggest applying the same approach to boilers.

## Emissions in use phase

The working document identifies NO<sub>x</sub>, CO, Hydrocarbons, Particulates and the refrigerant fluid in heat pumps as significant environmental parameters. The draft Eco-design measure however contains only threshold values for NO<sub>x</sub> emissions. We therefore reiterate our previous comments and call on the Commission to set not only ambitious limit values for NO<sub>x</sub> emissions but also for CO, hydrocarbons and particulates in the eco-design requirements. Such measures should be based on existing legislation in EU Member States.

We are not convinced that a general reference to the General Product Safety Directive is sufficient in order to exclude possible negative health effects for consumers. As the Eco-design measure asks for boilers to be third-party tested, we consider binding legal values on NO<sub>x</sub> and CO emissions important as these would consequently also be subject to the testing procedure. In addition, market surveillance authorities would have a clear reference values when enforcing the requirements on emissions.

Regarding threshold values for NO<sub>x</sub> and CO, we also refer to the German Blue Angel criteria for oil-burner boilers dating from March 2006<sup>2</sup>. The German Eco-label is awarded to boilers which have lower emissions and which have a higher efficiency than based on current standards.

The Blue Angel criteria also set detailed testing requirements for these boilers. As these criteria exist and are verifiable, we insist on binding values in the Eco-design regulation. The Eco-design criteria should however be more ambitious than the Blue Angel criteria as they are dating from 2006 and the level of ambition would be outdated by the time when the Eco-design requirements apply in the year 2013 and 2014.

We noted that the NO<sub>x</sub> values for gas and oil boilers have been increased tremendously compared to the previous working document (e.g. increase from 42 to 105 mg/kWh for oil boilers). We therefore propose setting several steps of eco-design requirements in order to lower emissions from boilers.

We also consider it important to address the global warming potential which results from refrigerant leakage in heat pumps. Unfortunately specific eco-design requirements which would encourage the use of refrigerants with a low global warming potential are missing.

### **Independent Third-party- testing is supported**

We strongly welcome the proposal to make independent third party testing the rule. Consumers cannot assess if the required eco-design requirements have been fulfilled. Independent third-party testing is therefore important to ensure that boilers on the market meet the requirements.

### **Zero watt mode needed**

As CH-boilers are often only used during the heating season, we consider it important to avoid energy losses from standby during the rest of the year. We therefore suggest including a provision for a zero watt mode/ hard-off switch which would allow consumers to switch off the appliance during the seasons when no heating will be required.

### **Information tool on correct sizing of boilers**

We welcome the proposal to set up an internet tool which would help consumers to determine the correct size of a boiler. This tool would be useful as a first orientation when getting in contact with an installer.

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<sup>2</sup> RAL Vergabegrundlagen für Ölbrenner-Kessel Kombinationen (Units), RAL-UZ- 46, Ausgabe März 2006, [http://www.blauer-engel.de/downloads/vergabegrundlagen\\_de/UZ-046.pdf](http://www.blauer-engel.de/downloads/vergabegrundlagen_de/UZ-046.pdf)

We consider it however important to allow consumers a comparison of investing in a complete new boiler or to upgrade an existing heating system with solar panels. The internet tool should therefore allow for a comparison of both options.

### **Ensuring installation with optimised controls**

In the interest of consumers we call on the Commission to ensure that all boilers will be installed with controls which ideally fit to a particular boiler in order to ensure an efficient operation of the heating system. It has therefore to be ensured that in all Members States a legal obligation to install boilers with controls will be enforced.

We are sceptical about including controls into the boiler package as this would restrict consumer choice for different controls. It could lead to a situation in which the delivered controls will not be installed because the consumer has another preference. Consequently, the consumer would be forced to invest additional money into new controls. In order to ensure that consumers have a choice and that the system will be optimised, we think that the Energy Performance of Buildings Directive would be the better instrument to achieve this aim.

We do not support giving a bonus of 2% to boilers which are delivered with controls when calculating the overall energy efficiency of boilers. The simple obligation to deliver a boiler with controls does not ensure that high quality controls will be delivered or installed. It would be misleading for consumers if a boiler delivered with low quality controls would receive a better rating on the Energy Label than the same boiler delivered without controls.

### **Energy Labelling requirements**

We support the inclusion of boilers in the EU Energy Labelling scheme, because this ensures recognisability of the label for consumers.

The label must have an identifiable top class and needs to be regularly updated by re-scaling the classes. The process of rescaling has to be co-ordinated closely with the different steps of phasing out inefficient appliances due to eco-design requirements.

The label should be technology independent meaning that all different technologies functioning with energy from different sources should be fitted into the same labelling scale. Having different labelling schemes for different boiler technologies would be confusing for consumers and might not guide them towards the most efficient products on the market.

As the final layout of the label has not been decided yet, we cannot give a concluding opinion. We would however ask to take the following considerations into account:

- We are not supportive of having classes on top of “A” for renewable technologies. The class “A” should only be awarded to the best available technology, even if it is not affordable for all consumers. Moreover, instead of adding classes on top of “A”, all classes at the bottom of the label should be populated. We propose to award classes “A” and “B” only to products which include the use of renewable energies. Boilers operating with fossil fuels should populate classes C to G in order to demonstrate to consumers that systems without renewable energies are not anymore the state of the latest technology.
- Before taking a decision on possible classes on top of “A”, we strongly recommend to wait for the results of the planned consumer survey on the different options for the Energy Label layout.
- The information on boilers working with renewable energies should in addition to the label being communicated through other means, e.g. advertisement and advice from installers.

### **Scope of Energy Label needs to include the whole market**

We are concerned that in the case of solar systems, the Energy Label will not cover the whole market and all manufacturers. Some producers of solar panels cooperate with boiler manufacturers and deliver their products as a package together with a boiler. Others, especially smaller manufacturers, prefer to stay independent and sell panels only. In this case, the installer combines the boiler and the panel. If the label applies only to product packages, this will disadvantage those panel producers who sell panels only.

This is also problematic in terms of consumer information as consumers who wish to upgrade existing boilers with solar panels do not know which Energy Label class the combined system would achieve. As we consider it important to encourage consumers to upgrade existing heating systems with input from renewable energies, we see a need to better inform consumers thereof. The above mentioned internet tool could be a suitable device.

### **Pictograms for boilers and combi-boilers are not clear to consumers**

- We have concerns that the proposed pictograms concerning the load profiles of boilers are not self explanatory to consumers. Although the sizes from XS to XXL are known to consumers in the case of textiles, it would be difficult for them to find the correct boiler-size according to these categories. The sizes of XS to XXL do not have a meaning for consumers as a reference value is missing which would allow a categorisation.

- The pictograms concerning load profiles will also not help to avoid installation of overcapacities. If for instance a boiler of size XL performs at the bottom of class “A” and a boiler of size L performs at the top of class “B” and the boiler of size L would still be sufficient for a particular building, the consumer would probably opt for the larger boiler. However, this would not be the most efficient choice.
- The table showing the performance for different boiler sizes and climate classes is confusing for consumers and too complex. As for each individual consumer only one climate class and one size class would be applicable, several rows on the Energy Label would be misleading.
- We have also concerns that the pictograms “sun”, “cloud” and “snowflake” are too complicated for consumers to understand. It is unclear that it relates to the efficiency in a particular geographic area (average, colder and warmer climate). It could for instance be misunderstood as a reference to different levels of energy consumption of a particular boiler at different weather conditions (cloudy, sunny and snowing). Thus, we believe that a language neutral pictogram is not suitable to inform consumers about the climate type as this needs written information.
- We also think that the pictogram showing the EU map regarding the different climate zones (average, colder, warmer) is not self-explanatory. In addition, it seems to be too small in order to identify easily the relevant countries. Using so many different colours also increases the potential of mislabelling as the printout would rely on a very high quality.
- For consumers it would be of importance that they only receive information that is relevant for their climate zone. As the label will be the same in all EU countries, information on the climate zones should be given in the manual instead of including this information into the label. The information in the manual about different climate zones is important for in particular when using renewable energies (solar, heat pumps). In addition, a distinction between different climate zones is important when conventional boilers are used. Basing the information only on an average climate (Strasbourg) would lead to differing values if used in warmer climate (Athens) or colder climate (Helsinki).
- We do not support mentioning the term “EcoProduct” as it will be unclear for consumers what it means. We therefore suggest deleting the term from the header of the label for cylinders.

### **Additional information to consumers**

The working document 9 proposes to attach in addition to the label a permanent plate to the boiler informing consumers about the exact class related to the heat load of the building. We do not see the added value for the consumer. In case of resale or refurbishment of the building, such a label might be misleading as boiler performance and buildings characteristics change over time. Also, confusion with the energy performance certificate of buildings should be avoided. Instead of labelling just the boiler we rather see the need of proper documentation and regular inspection such as envisaged in the Energy Efficiency of Buildings Directive.

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