

Ecodesign regulations for Solid fuel boilers and Local space heaters approaching the final steps



JORMA RAILIO
Chair of REHVA Technology and
Research Committee
jorma.railio@gmail.com

The Ecodesign Framework Directive 2009/125/EC establishes a framework for setting eco-design requirements for energy-related products. It is a key instrument of EU policy for improving the energy efficiency and other aspects of the environmental performance of products. The Eco-design directive does not set binding requirements on products by itself: it provides a framework (rules and criteria) for setting such requirements through implementing measures. For products intended to consumer use, binding rules for energy labelling are usually prepared in parallel with eco-design regulations. Some main principles and a few processes of preparation have been introduced earlier in the REHVA Journal [1]. This article gives some news on “hot topics” relevant to HVAC, plus brief notes on a few new studies.

The preparation of the implementing measures is a long process - the preparatory work in the “Lots” and other phases are introduced in more detail on REHVA EU Regulations webpages, at <http://www.rehva.eu/index.php?id=79>, and summarized in the following figure also available at REHVA’s Ecodesign webpage. The duration of the steps is typically a little more than planned, because delays appear for several reasons (workload, difficulties to find consensus, co-ordination of two or more “lots”) and sometimes the whole process of preparation is put on hold for some time.

Boilers and local space heaters – soon to be all covered by regulations?

After a very long – more than 8 years from the beginning – process of preparation, the Ecodesign regulation for gaseous and liquid fuel boilers has been finally approved - see a complete introduction to the new requirements in [2]. For solid fuel boilers, the preparations started in 2009, and after some delays the work has now proceeded towards the final steps. In parallel, also local space heaters (using either liquid, gaseous or solid fuels) have been subject to eco-design studies, and now it should finally be possible to look at all types of boilers and heat-

ers “in one picture”. However, as the new versions of proposed regulations contain some changes to the ones prepared for the Consultation Forum in autumn 2012 - even in the scope and main definitions, it is still too early to predict the final contents or dates of publication of the coming regulations.

Solid fuel boilers (Lot 15)

In May 2013, three documents were circulated to Member States for comments and will be finalized taking into account the received comments. These documents are still subject to change, and the revised versions will be sent for comments approximately one month prior to the Regulatory Committee meeting, foreseen to be held in September 2013.

The documents include a Working Document on a Draft Commission Regulation

- with regard to eco-design requirements for solid fuel boilers, and
- with regard to the energy labelling of solid fuel boilers and packages of solid fuel boiler, supplementary heater, temperature control and solar device
- ...and a third document, a draft communication from the commission on a transitional test method for solid fuel boilers.

The proposed regulation establishes eco-design requirements for the placing on the market and/or putting into service of solid fuel boilers with a rated heat output $\leq 1\,000$ kW, including those integrated in packages of solid fuel boilers, supplementary heater, temperature control and solar device. The energy labelling regulation gives some more detailed descriptions about the product definition, but also the proposed eco-design regulation gives a list of products not included in the scope, for example (list not exhaustive) boilers generating heat only for the purpose of providing hot drinking or sanitary water, or boilers for heating and distributing gaseous heat transfer media such as vapour or air, or solid fuel cogeneration boilers with a maximum electrical capacity of 50 kW or above

After the Consultation Forum, there are a few significant changes in the proposed regulation. First of all, the upper limit of rated heat output has been extended from 500 kW

to 1 000 kW, bringing some new manufacturers within the scope. Also there are less product types excluded from the scope now. For example, Cogeneration space heaters were previously excluded from the scope, and now it is proposed to exclude “solid fuel cogeneration boilers with a maximum electrical capacity of 50 kW or above”.

There are also changes in the definitions, for example an addition to the “solid fuel boiler” definition:

“has a heat loss to the space it is located in of no more than 6% of rated heat output”;

Some requirements have changed, as well as the schedule – instead of step by step tightening requirements, now all main requirements would enter into force four years after publishing of the regulation. The current proposal gives the main requirements as follows:

(a) Solid fuel boilers shall comply with the following requirements from [date to be inserted: four years after the entry into force of the Regulation]:

- *seasonal space heating energy efficiency shall not be less than 77%;*
- *seasonal space heating emissions of organic gaseous compounds shall not be higher than 10 mg/m³;*
- *seasonal space heating emissions of carbon monoxide shall not be higher than 300 mg/m³;*
- *seasonal space heating emissions of nitrogen oxides, expressed in nitrogen dioxide, shall not be higher than 200 mg/m³;*

These requirements shall be met for the preferential fuel and for any other suitable fuel of the solid fuel boiler.

Local space heaters (Lot 20)

“Local space heater” is defined as follows:

‘local space heater’ means a space heating device that

a) emits heat by direct heat transfer or by direct heat transfer in combination with heat transfer to a fluid, in order to reach and maintain a certain level of human thermal comfort within an enclosed space in which the product is situated, possibly combined with a heat output to other spaces; and

b) is equipped with one or more heat generators that convert electricity or gaseous, liquid or solid fuels directly into heat, through use of the Joule effect or combustion of fuels respectively.

Also for these products, three working documents were sent for comments in late May 2013 – with very much similar structure as the ones for solid fuel boilers. The draft ecodesign regulation establishes ecodesign requirements for the placing on the market and/or putting into service of domestic local space heaters with a nominal heat output equal or below 50 kW and commercial local space heaters with a nominal heat output equal or below 70 kW. It is worth noticing that the draft energy labelling regulation covers only heaters up to 50 kW, and it does not use definitions domestic and commercial. Examples of products not included in the scope:

- local space heaters using a vapour compression cycle or sorption cycle for the generation of heat (either driven by electric compressors or fuel);
- local space heaters that are specified for the combustion of non-woody biomass only;
- local space heaters specified for other purposes than indoor space heating to achieve a certain thermal comfort of human beings;
- local space heaters that are specified for outdoor use only

As in the case of solid fuel boilers, also here changes have been made in the proposals, including the scope and the list of excluded products. It is also very crucial for manufacturers to observe that requirements in draft regulation would enter into force in one stage with very stringent requirements for energy efficiency and emissions. As a new requirement limit values for NO_x emission has been proposed.

Because of the many changes, it would now be important for both Member States and individual manufacturers, as well as manufacturers’ organizations to study the current proposals carefully. The list of National contact points in charge of the implementation of the Ecodesign Directive 2009/125/EC can be found at EC homepage*. ■

References

- 1 Railio, Jorma: Ecodesign of energy related products – time for industry to wake up. REHVA Journal. Vol 50, issue 1/2013, pages 54-55.
- 2 Klobut, Krzysztof: New regulation sets demanding Ecodesign requirements for boilers. REHVA Journal. Vol 50, issue 3/2013, pages 30-33.

* http://ec.europa.eu/enterprise/policies/sustainable-business/documents/eco-design/national-contacts/implementation/index_en.htm