INFORSE-EUROPE
International Network for Sustainable Energy - Europe

ECOS

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Additional comments from INFORSE Europe and ECOS (*on behalf of Environmental NGOs*)

on the final version of the methodology for the Ecodesign measures on Boilers (EuP Lot1)

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The following comments have been prepared after the expert meeting organised by the European Commission on the methodology for the Ecodesign of boilers on 16 December 2009 (EuP Lot1).

We welcome the constructive discussions that took place during the meeting. We would like to point out the following remaining issues:

- **Heat Pumps**

- Degradation factor for cycling:

Realised degradation factors (Cd) vary considerably. We have not been able to see recent tests or tests of European equipment. Large tests from the US in 2000 exposed Cd between 1% and 25% for a large sample of air-conditioners, but we do not have similar specific data for heat pumps. The earlier proposed default degradation factor of 0.25 seems to be the current maximal degradation factor, assuming parallel situations between heat pumps and air-conditioners.
We consider that it is a rationale decision to allow the use of a default Cd=0.25 for all types of heat pumps, and then leave the chance for manufacturers to carry out measurements of cycling is they wish so to change the Cd used for a specific model. A decision to set a lower default degradation factor Cd would need to be based on more data from real heat pumps (in the bottom-end of the market). Instead of a degradation factor, a zero-load consumption could be applied, as the ratio between input power and output power is very close to linear.

- The brine temperature of the ground source heat pumps is proposed to be 0°C. A study from Fraunhofer Institute of a number of ground source heat pumps using "horizontal ground exchangers" in Germany showed an average brine temperature of 2-3°C during the heating season, but with the lower range at an average 0°C. Thus, it seems that 0°C is reasonable for Germany (i.e. average climate) and using a conservative temperature estimate which we favour. In our opinion, the content of the study does not give evidence for changing the brine temperature from the proposed 0°C for average climate.

- The proposed system temperatures (Table IV.2 of the document) seem low for heat pumps, and probably too low. The Danish standard for the most popular floor heating is 40/50°C (at design temperature, for wooden floor), and it would give the wrong signal to consumers to provide the proposed lower temperatures of 30/34°C at -7°C equal to about 31/35°C at -10°C (design temperature, average climate).

- The lower heating system temperature for lower loads (Table IV.2) requires that the heat pump has a control system that regulates the system temperature according to the heat load or outdoor temperature, not just a simple thermostat. Such a regulation must be a mandatory requirement in order to use these temperature sets. Otherwise, a constant system temperature should be used.

- It is stated in Table IV.2 note 2 that the power output Php1 - Php5 are declared. Does that mean that they do not need to be actually measured?

- Finally, the methodology only covers standby losses during the heating season (allhrs), while in the EuP Lot 10 on air-conditioners the full year standby is considered. We recommend consistency by systematically using the yearly overall standby losses, and we also remind that our organisations call for a mandatory 0 Watt mode on reversible air-conditioners / heat pumps to avoid unnecessary energy waste during off-season periods.

- **Buffers**

- The controllability "cband" is a factor of a system buffer. It must be specified that only a buffer above a certain size qualifies to be used in this formula.

- We agree in principle that there should be a benefit of buffers to reduce cycling (they do not avoid cycling, but make the periods longer); hopefully such a factor can be based on field tests.

- In the formulas for the heat losses from the system buffer and solar buffer, the losses for both are based on the heating period and a tank temperature of 60°C as default (which can be varied). This is far from realistic for a solar tank that would only be a small part of the heating system. Either the period should be shortened or the average temperature lowered for the solar tank (this can be checked with the ESTIF federation).

- **Fossil boilers**

We agree that a degradation for cycling should be included for fossil boilers, and a default of 10% seems reasonable (as actual degradation seems to be in the range of 0-10%). Manufacturers should then have the option of measuring the degradation and use the measured value.

- **Pumps**

External pumps are included in the Lot 1 model, but with higher consumption than internal pumps. We can confirm that if (and only if) the pump is controlled by the boiler control, external pumps will have the same consumption as internal ones.

Maybe the definition should be changed from "internal pumps" to "internal pumps and pumps controlled by the boiler", so that pumps not controlled by the boiler are given a higher expected energy consumption.

- **Declaration of efficiencies**

It is not very clear from the methodology if boilers can be declared with a lower capacity than their rated power. This would improve the relevance of the labelling, so users could see the effect of over-sizing. In some cases, there might be an efficiency gain through a limited over-sizing, which the manufacturer could also highlight in this way.

- **Refrigerants**

It is crucial that information to consumers includes the climate effect of using F-gases, in order to drive the demand to the most climate-friendly (and not only energy-efficient) alternatives.

Thus, we can support the previous proposal of putting a malus limit on the efficiency of heat pumps if they work with refrigerants with global warming potentials above e.g. 50. Alternatively, F-gases with a global warming potential above 50 or 100 should be banned.

END.