BAM and UBA comments on the draft report (tasks 1-6) "Ecodesign & Labelling Review Household Refrigeration"

We appreciate the review of requirements regarding Ecodesign and Energy Label of household refrigeration appliances. We would like to comment on the following topics:

Scope and definitions

We agree that the term "non-household" remains in the scope. Certainly, it would be nicer not to have it in a regulation covering household refrigeration, but probably it is necessary to avoid loopholes. The expression "household or similar" does not seem to be more suitable. A technical definition would be desirable but is probably difficult to find.
Apart from that, we support what Hans-Paul Siderius commented after the first stakeholder meeting in July 2015: the definitions should be such that every refrigeration appliance in the scope of the regulations concerning household, commercial and professional refrigeration is unambiguously covered by one (and only one) regulation.

Durability

We appreciate that during the stakeholder meeting in December 2015, it was announced that in task 7 an option is planned which considers durability in more detail. From our point of view, there are still open questions:

Is it really clear that lifetime extension is not worthwhile, even with newer and more energy efficient appliances? The recommendations with regard to life time extension are still based on backwards looking research (replacement of A or A+ appliances) and are not future oriented (replacement of A++ or A+++ appliances).

Rationale:

It can be assumed that by the time of entry into force of a revised regulation, the main energy efficiency classes put on the market are A++ and A+++. According to

Gensch and Blepp (2015)[1] it needs further efficiency gains of 40-50% (with respect to A+++) in order to achieve environmental payback times of 10 years and less. This means, if someone has an A+++ model it only makes sense to replace it, if the new model has half the electricity consumption than the A+++ one. The analysis in Task 6 of the preparatory study shows that the savings of current BAT in comparison with A+++ efficiency are between 10 and 25%, only in case of fridge-freezers (COLD 7) further efficiency gains of 45% are seen (see tables 64 to 69). The study team also concludes that "there are no BNAT (Best Not yet Available Technology) options that we feel will come to market within a time-period that is relevant for reshaping the Ecodesign and Energy Labelling measures". This means that, especially in case of A+++ appliances, a longer life time makes sense.

Also Bakker et al. (2014)[2], taking into account the average electricity consumption of fridge-freezers since 1980 and its extrapolation until 2020, come to the conclusion "that product life extension is the preferred strategy […]: refrigerators bought in 2011 should be used for 20 years". This means, already for an average fridge-freezer bought in 2011 they recommend a life time of 20 years as being the most environmental friendly.

If other impact categories than only total energy consumption or the GWP are regarded – especially impact categories with higher impact in the manufacturing phase (e.g. metallic resources or acidification) the results would be much more in favour of longer durability.

Would it not be possible to include durability requirements in the regulations, perhaps also only for certain components which are prone to fail early? The study should at least elaborate on durability aspects and show the possibilities and pros and cons of minimum durability requirements. The decision if such requirements are set is a political one which is taken afterwards, this is not the task of the preparatory study. The RCARDO-AEA study (2015), which has been already cited in the preparatory study, provides already a sound analysis of test methods of components of refrigerating appliances.

Rationale:

The time span of the 'first useful service life' has decreased over the past years in Germany: GfK data (see Prakash et al. 2015)[3] show that the average age of refrigerators, that were replaced due to a defect decreased from 15.1 years in 2004 to 14.0 years in 2012/2013. In case of freezers it decreased from 16.1 yrs (2004) to 13.0 yrs (2012/13). Especially the share of appliances that were replaced due to a defect within the first 5 years has increased substantially (ibid.). One reason for the latter aspect is supposed to be the price decrease for new products while at the same time the repair costs increased over the past years. Both developments make the repair relative expensive compared to the purchase of a new appliance. Even though

[1] Gensch, C. & Blepp, M.: Betrachtungen zu Produktlebensdauer und Ersatzstrategien von Miele-Haushaltsgeräten. Im Auftrag der Miele & Cie. KG. 2015.

[2] Bakker, C; Wang, F.; Huismana, J.; den Hollandera, M.: Products that go round: exploring product life extension through design, Journal of Cleaner Production, Volume 69, 15 April 2014, p. 10-16

[3] Prakash, S.; Dehoust, G.; Gsell, M.; Schleicher T. & Stamminger, R. (2015). Einfluss der Nutzungsdauer von Produkten auf ihre Umweltwirkung: Schaffung einer Informationsgrundlage und Entwicklung von Strategien gegen „Obsoleszenz".

a repair would still be possible it is economically not viable anymore. In such a situation minimum requirements that ensure a certain minimum lifetime are very important to prevent early appliance failure and subsequent replacement.

Compensation factors

We agree that there is a need for compensation factors for auto-defrost, built-in and combi. The built-in compensation should be such that it only compensates for the different measurement method for built-in appliances.

Rationale:

Auto-defrost: Refrigerating appliances are less efficient if the evaporator is covered with ice. No-frost appliances need more energy under standard conditions compared to static appliances as they have regular defrosting cycles to melt the ice on the evaporator and drain the water. The energy consumption of static appliances might thus be lower under standard conditions compared to an equivalent no-frost appliance. Under real life conditions however it can be assumed to be higher, 1) due to ice covering the evaporator and 2) as also during manual defrosting additional energy is needed (e.g. for cooling down the freezer / the freezing compartment after manual defrosting). For static appliances these two aspects are not covered under standard conditions.

Built-in:The main argument in favour of a compensation factor for built-in appliances is, that they do not necessarily have a higher energy consumption as such but that (at least part of) the higher consumption value comes from the way they are tested. Both industry and the study team argue that the energy consumption of stand-alone appliances would increase when tested under built-in conditions. Stand-alone appliances might even need more energy than an equivalent built-in appliance that has a worse test result on the label, as it is not well prepared for that situation. Consumers could therefore be misled by the good label performance of a stand-alone appliance and decide for such an appliance even though they finally use it under built-in conditions.

Combi: such a factor seems reasonable as combi appliances (e.g. fridge-freezers) have an advantage compared to single appliances, e.g. through shared walls that result in lower "ambient temperatures" and thus less heat loss. Therefore it is good to introduce such a factor that makes the requirement stricter for combi appliances.

We also think that a multi-door compensation could be reasonable because it could lead to more appliances with compartments having different temperatures and thus possibly to energy savings. However, it strongly depends on the consumer's behaviour if multi-compartment appliances really result in less food waste and less shopping trips. A compensation factor should only be granted if there are, compared to appliances with 1 or 2 doors, savings under real life conditions which are not accounted for under standard conditions. Such savings could also result from the fact, that only the necessary compartment is opened and thus less air exchange takes place. This is, however not yet discussed in detail in the report and should be elaborated in a bit more detail.

An additional compensation factor for chill compartments is not necessary from our point of view.

Regarding the glass doors of wine coolers, we do not think that it is necessary to have a compensation factor, but to formulate the ecodesign requirements such that wine coolers do not have any problems to stay on the market. The label however should show that wine coolers with glass door consume more energy than a fridge with comparable size and temperature.

Suggestion regarding the scenarios in Task 7

We propose to use one of the scenarios to assess the impact of life time requirements, e.g. requirement on one or two components like the thermostat or the compressor based on the analysis of the Ricardo-AEA study.

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