CONSUMER RELEVANT ECO-DESIGN AND LABELLING REQUIREMENTS FOR REFRIGERATORS & FREEZERS

Contact: Sylvia Maurer – Sylvia.Maurer@anec.eu
Sylvia.Maurer@beuc.eu
Ref.: ANEC-PT-2008-EuP-048final
X/074/2008 - 03/12/08

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

Summary

In the context of the implementation of the Eco-design of energy-using products Directive, the European Commission is proposing eco-design and labelling requirements for household cooling appliances, including refrigerators and freezers (Lot 13).

This paper outlines the main consumer relevant issues related to possible eco-design and labelling requirements for this category of appliances and recommends improvement options.

In overall, we welcome that the eco-design requirements proposed by the Commission address the energy consumption of these appliances but we propose to set a second set of energy efficiency requirements for compressor-type refrigerators already three years after the entry into force of the Implementing Measure. We also welcome that generic eco-design requirements preventing the sub-optimal use of cooling appliances through automatic controls are foreseen.
In addition, we stress that benchmarks should show a more complete picture concerning the main types of appliances on the market.

We emphasise the need to keep the A-G label meaningful for consumers and to include important aspects on the label such as the benchmark value for noise. In this context, we strongly criticise the layout of the Energy Label proposed by the Commission as it introduces a double scale of numbers and letters which is too confusing for consumers. We recommend keeping the layout of the well-known A-G label.

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

Introduction

The Commission working document addresses two different kinds of refrigerators, compressor type and absorption refrigerators. Compressor type refrigerators which represent over 95% of the overall refrigerating appliance market in the EU are the main application for households. Absorption refrigerators are mainly used in hotel rooms or hospitals. Their advantage is a zero noise level, whereas their disadvantage is a very high energy consumption compared to compressor-type models. Absorption type refrigerators only represent a small niche market for consumers as only 2.5% (10.000-20.000 units) are in private households[1].

In the year 2005, about 182 million refrigerators and 81 million freezers were in use in European households (see Annex Table 2 and 3). It is estimated that the stock of refrigerators will increase until the year 2030 to up to 236 million units and the stock of freezers to 103 million units.

The energy efficiency of fridges and freezers has been improved considerably since the introduction of the EU Energy Label. Nowadays most cold appliances are indeed rated "A" or better (for a distribution of labelling classes see Annex, table 1). Despite this, the preparatory study found that the largest environmental impact is still generated during the use phase of these appliances. Taking into account that the number of cold appliances in use will continue to rise and that energy prices have considerably increased in recent years, we appreciate that mandatory eco-design requirements on the energy efficiency of cold appliances will be set. Thus, the worst performing products will be phased out from the market.

In this paper, we address the core consumer interests with regard to eco-design and labelling requirements on energy efficiency of household cooling appliances.

We welcome the introduction of generic eco-design requirements such as the reversal of the fast-freezing facility. However, we propose to set an additional step for energy efficiency requirements for compressor-type refrigerators three years after the measure enters into force as the Commission approach does not appear ambitious enough.

[1] Preparatory Study on Lot 13, Task 1, p.118.

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

1. Generic eco-design requirements

In overall, we welcome the introduction of generic eco-design requirements such as the reversal of the fast-freezing facility. However, we propose to set an additional step for energy efficiency requirements for compressor-type refrigerators three years after the measure enters into force as the Commission approach does not appear to be ambitious enough.

Information on wine storage fridges

Simply informing consumers, in the booklet of instructions, that the appliance is only intended for the long term storage and aging of wine is not sufficient as the manual is often not accessible before purchase. Therefore it should be made obligatory to clearly display the information that the refrigerator is not suitable for products other than wine at the point of sale.

Moreover, it is unlikely that a simple declaration of the area of application will be a suitable measure to close the loophole with regard to the fact that no specific eco-design requirements for the energy efficiency of these special appliances will be set. Such energy efficiency requirements should be added as soon as a standardised measurement method for their power consumption is available.

Automatic switch-off of fast freezing facility

We welcome that generic eco-design requirements requiring better controls to be used in household cooling appliances are included. In particular, the requirement that the fast freezing facility will be automatically reverted into the normal cabinet or compartment storage temperature after no more than 72 hours will provide for energy and cost savings. As consumers often forget to switch off the fast freezing function, this automatic reversal will be a real improvement. We therefore recommend introducing this feature already one year after the Implementing Measure enters into force.

Automatic 0 Watt mode for small fridges

We support the Commission proposal that small refrigerators with a capacity below 10 litres should automatically switched off into a zero watt mode when empty. Moreover, if such a technical possibility for a zero watt mode for empty fridges already exists, we urge it to be made mandatory for all refrigerators.

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

Generic requirement on warning signal

We recommend to introduce a generic eco-design requirement that fridges and freezers should give a warning noise signal in case the interior temperature of the appliance increases, e.g. because the door was left open. As freezers are often placed in the cellar a warning light is not sufficient[2].

Generic requirement on temperature indication

Many refrigerators do not allow consumers to select the exact interior temperature of their appliances in degrees Celsius. Very often consumers have to adjust the temperature in the fridge with a thermostat based on a scale from 0-6. This system is not adequate considering that most consumers do not know to which cooling temperature a "3" corresponds. We therefore ask for all refrigerators to have, from stage one, thermostats which allow consumers to set a precise temperature based on one degree intervals.

2. Eco-design requirements on energy efficiency

The Commission proposal foresees specific eco-design requirements on energy efficiency in three stages:

Stage 1 (one year after entry into force): Setting energy efficiency requirements for compressor-type refrigerating appliances with a storage volume equal or larger than 10 litres would result in phasing out of the market all compressor-type refrigerating appliances with an Energy Efficiency Index (EEI)[3] beyond 55. This corresponds to the threshold of the current class "A" appliances, thus leading to all classes from current class B-G to disappear from the market. The most inefficient absorption-type and other-type refrigerating[4] appliances with a storage volume larger than 10 litres and with an EEI beyond 150 would also be phased out.

Stage 2 (three years after entry into force): Setting energy efficiency requirements that would phase out all models with an EEI beyond 125 with the exception of compressor-type models .

Stage 3 (six years after entry into force): Setting efficiency requirements that would phase out all compressor-type refrigerating appliances with EEI beyond 44. This corresponds to the current class A+ threshold. All

[2] Such a warning signal was not present in any of the models tested by Stiftung Warentest in 2008, see test 11/2008, pp. 60-64.
[3] The lower the EEI, the higher the energy efficiency
[4] These are mainly thermoelectric cooling appliances.

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

absorption and other-type refrigerating appliances with EEI beyond 110 would also be phased out.

After the implementation of the third stage, only 20% of refrigerators available in 2005 would be on the market (current A+ and A++). However, as lower energy consumption has a high priority for consumers, the schedule of phasing out of compression type refrigerators should be reconsidered and more ambitious target dates should be set.

We therefore propose to set a three stage process not only for absorption type models but also for compressor type refrigerators, as follows:

Stage 1:
Phase out of compressor type models with EEI higher or equal to 55.

Stage 2:
Phase out of compressor type models with EEI higher or equal to 50.

Stage 3:
Phase out of compressor type models with EEI higher or equal to 44.

This approach would have the advantage that already after three years, a certain market share of less efficient products would not be provided to consumers. Consequently, consumers would have to pay lower running costs. As the average life-time of cooling appliances is longer than ten years, lower running costs are a cost saving measure for consumers.

Moreover, the introduction of an additional step will increase the production volume of cooling appliances with a better energy performance earlier than what is proposed by the Commission. This might also lead to lower unit prices for consumers and thus be an incentive to replace old and inefficient cooling appliances.

We also recommend this step because the EcoTopTen database shows that already today consumers can choose from a large variety of refrigerators and freezers in different sizes which are rated A++. A notable number of these appliances are even available for less than 450 €.

3. Eco-design requirements for noise

The working document explains that noise levels will only be indicated on the energy label but that no maximum noise level will be set. However, on the basis of the preparatory study, it was found that almost all compressor type models present a noise level below 45 dB(A). We therefore argue that a mandatory noise level should be set for compressor type models in order to avoid that models with a noise level above 45 dBA will appear on the market.

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

4. Benchmarks

Due to a large variety of different models for refrigerators and freezers on the market, the list of benchmarks represents only a small section. In this context, we propose to differentiate the benchmarks and set additional benchmarks for:

- Compressor type refrigerators: an appliance with a volume of 119 litres fresh food compartment, 18 litres four-star rating compartment and an annual energy consumption of 127 kWh[5].

- Compressor-type refrigerator-freezer: an appliance with 221 litres fresh-food compartment, 82 litres of four-star freezer compartment and an annual energy consumption of approximately 202 kWh[6].

5. Verification procedure

We call on the Commission to decrease the measurement tolerances for the annual energy consumption from 10% to below 5% as we believe that this value is achievable.

6. The fiche (Annex IV)

In addition to the maximum noise level also the benchmark value for noise in the product category should be given.

Moreover, we propose to include in the fiche information on the climate class in order to allow consumers to choose the right appliance.

Consumers should also be informed about the influence which different ambient temperatures have on the energy efficiency of the refrigerator. This information should clearly explain that lower ambient temperatures in a room are directly linked to a lower energy consumption of the refrigerator. Moreover it should be explained that refrigerators should not be installed e.g. closely to the heating or the oven as this would increase energy consumption.

As the freezing capacity can differ considerably between different appliances, consumers should be informed how much food (in kg) can be safely stored in the freezer compartment without exceeding the recommended capacity.

[5] www.ecotopten.de/prod_kuehlen_prod.php
[6] www.ecotopten.de/prod_kuehlen_prod.php

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

The time should also be indicated for which the food will remain properly frozen in case the temperature rises due ton an interruption of power supply. For safety reasons consumers should be clearly informed that if this time is exceeded they have either to eat the food or to dispose of it and that it should under no circumstances be re-frozen.

7. Energy Label

We welcome the Commission proposal to update the Energy Label which is applied on household cooling appliances. As most cooling appliances are currently labelled with A, A+ and A++, a rescaling is urgently needed in order to ensure that consumers can make an informed purchase decision. In this context, we welcome that the downgrading process will rescale the classes currently rated as above 'A', into the A-G scale.

A-G scale must be kept

We reiterate our position to keep the layout of the A-G scale unchanged to inform consumers on the energy efficiency of cooling appliances[7]. Numbers on the left hand side of the scale do not perform a function in terms of consumer information and should therefore be deleted.

We particularly oppose the proposal to keep the A-G scheme only for a transition period, as stated in the explanatory notes of the Implementing Measure.

We reiterate our position to keep the layout of the A-G scale unchanged in order to provide consumers with clear and useful information on the energy efficiency of cooling appliances. Numbers on the left hand side of the scale do not perform a function in terms of consumer information and should therefore be deleted.

Considering that the label for refrigerators and freezers has already been in place for many years and consumer research[8] has clearly showed that the

[7] See ANEC/ BEUC input to the European Commission on the revision of the EU Energy Label, BEUC X/09/08 – 18/02/08, ANEC-ENV-2008-G-001final, 19 February 2008.

[8] ANEC, BEUC, Consumer Focus (formerly UK National Consumer Council), the UK Energy Saving Trust and the UK Department for Environment, Food and Rural Affairs (DEFRA) asked Ipsos MORI to carry out empirical research concerning consumers' perception of the A-G Energy label. See http://docshare.beuc.org/docs/1/IMNDMHNCPIGBNPIHIJGOPPAAPDBW9DBWBY9DW3571KM/BEUC/docs/DLS/2008-00802-01-E.pdf
http://www.anec.eu/attachments/ANEC-ENV-2008-G-040a.pdf

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

label works well in pulling the market up towards more energy efficient appliances, we do not see any benefit in introducing a new layout which would only confuse consumers.

We also do not consider it useful that after the label was upgraded, an empty class below class “G” with a number “1” will be shown on the label. This does not make sense as consumers might think that there are 8 classes available on the market. In practice however, consumers might only have a choice from the upper end of the scale (A and B), as the other classes will be empty due to eco-design requirements.

Distribution of labelling classes

The Commission intends to include both absorption and compressor type models in the energy labelling scheme of cooling appliances. On the one hand, labelling of absorption type models could provide an incentive to improve the energy efficiency of these model types. On the other hand, consumers should be clearly informed about the negative energy performance of these models. However, as the difference between absorption and compressor type models is considerable and compressor type models are the main household application, it has to be ensured that future re-scaling will not be less ambitious because of the absorption refrigerators.

Indication of the noise level

We welcome the indication of the noise level of the appliance on the energy label. However, to allow consumers to make an easy and accurate assessment of the noise level, also the benchmark value for noise in this product category should be shown on the label.

Other communications (Annex V)

It has to be ensured that also in other communications, e.g. catalogues and website consumer see exact the same label than in shops is shown to consumers.

End.

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers’ Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

ANNEX: Information on cooling appliances market

Table 1: Development of labelling classes 1995 – 2005 for cooling appliances

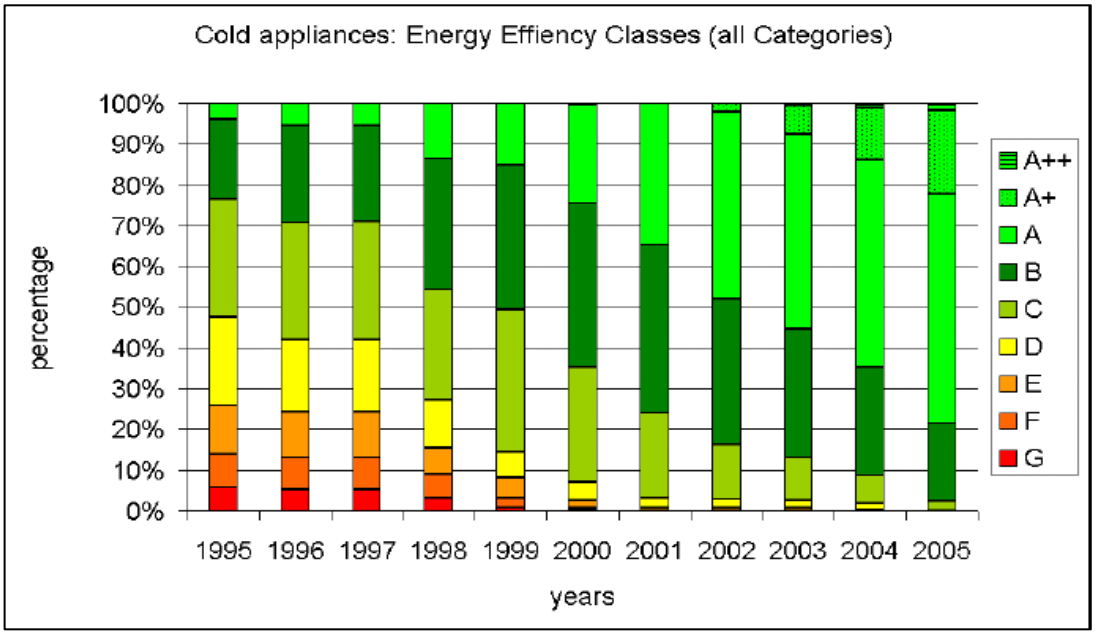

Table 2: Estimate of refrigerator stock development and related energy consumption

	Refrigerator stock	Total Stock energy consumption	Unitary Stock energy consumption
	Million units	GWh/year	kWh-appliance/year
1990	151	91,419	606
1995	164	85,761	524
2000	174	80,321	461
2005	182	71,067	391
2009	191	65,596	343
2014	203	59,582	294
2019	213	56,023	263
2025	225	54,098	240
2030	236	49,726	211

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu

Table 3: Estimate of freezer stock development and related energy consumption

	Freezer stock	Total Stock energy consumption GWh/year	Unitary Stock energy consumption kWh-appliance/year
	Million units		
1990	54	39,337	722
1995	67	41,315	621
2000	77	39,810	520
2005	81	34,986	431
2009	85	31,074	366
2014	88	26,651	301
2019	92	24,129	262
2025	97	23,036	237
2030	103	21,745	212

Source: Preparatory Study Lot 13, Task 2 report

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation
Av. de Tervueren 32, box 27 – 1040 Brussels - +32 2 743 24 70 - www.anec.eu

BEUC, the European Consumers' Organisation
36 avenue de Tervueren, 1040 Bruxelles - +32 2 743 15 90 - www.beuc.eu