



Position on the Draft Working Documents on the Ecodesign and Energy Labelling of Commercial Refrigeration

September 2014

We welcome the intention of the European Commission to address the important energy savings related to Commercial refrigeration (Lot 12). In our opinion, the 2nd July Consultation Forum highlighted the need for the Commission to strengthen its proposal by revising the proposed MEPS and label classes towards a higher level of ambition. Our views are detailed below.

Raise the ambition of the MEPS & Energy Label Classes

MEPS

We support three-tier regulations since they send a long term signal to the market and drive innovation. However, these must set ambitious objectives, otherwise they run the risk of being even counterproductive. The proposed energy efficiency requirements are in our views far too lenient:

- There is a mismatch between the minimum EEIs and the current BAT. For example, current BAT is within 2 and 5 times the 2021 minimum EEI; thus the incremental improvement should be greater than listed.
- CLASP research¹ has demonstrated that the proposed requirements are out of line with the US regulations.

For refrigerated vertical display cabinets: *"The 2017 EU MEPS are approximately 20% less demanding than the MEPS adopted 8 years earlier (2009) by the US DOE."*

For beverage cabinets: *"A standard full height single glass door cabinet under the 2017 EU requirements is allowed nearly twice the energy consumption of a similar cabinet in the US."*

For vending machines: *"The 2021 requirements for the EU allow twice the energy consumption per day of US MEPS that became effective in 2012."*

The explanatory note accompanying the draft Working Document lists all the reasons needed to justify a quick adoption of ambitious Ecodesign requirements:

- A number of extremely efficient and affordable energy saving technologies with payback times frequently under one year exist that could lead to significant improvements as regards the environmental performance of cabinets (physical closing of open cabinets by means of doors and installation of electronic energy management devices).
- The purchase culture of many appliances is still based on acquisition prices and not life cycle costs. The existence of proven, very affordable technology options for energy efficiency is therefore not yet systematically exploited, leading to a slow uptake of cost-effective energy saving technologies.
- There is a situation of split incentives, in which the retailer covering the energy running cost of the machines is often not the owner of the device.

¹ CLASP Analysis of EU policy proposals for DG ENER Lot 12 Commercial refrigeration – 21 August 2014

We therefore urge the Commission to reconsider the strength of its proposal. Should the one for all approach be the reason for this very low common denominator, we urge the European Commission to revisit the proposal, splitting the scope covered into subgroups and putting forward appropriate MEPS for each category of products, taking into account CLASP recommendations mentioned above.

➔ **Make the MEPS level way stricter in order move the market towards innovation and reap the savings related to this product group**

Label

We welcome the introduction of a label but think that the current proposal should be tightened for all products. Lessons need to be drawn from the domestic refrigeration experience. At the introduction in 1995, the A target level seemed ambitious, but revealed not to be. Current MEPS level is 42 and A is meanwhile prohibited on the market. By using technologies developed for the domestic sector, most applications in the commercial sector can save significantly fairly easy (e.g. improved compressors for commercial sector have become readily available at little extra costs).

➔ **Define ambitious class limits taking into account the lessons learnt from the domestic refrigeration experience**

As in the case of tumble driers, the top classes should be kept empty in order to allow for differentiation on the market. Topten demonstrated with the example of dishwashers and TVs how fundamental this is to ensure a drive towards innovation².

➔ **Keep top classes unpopulated from the entry into force of the label.**

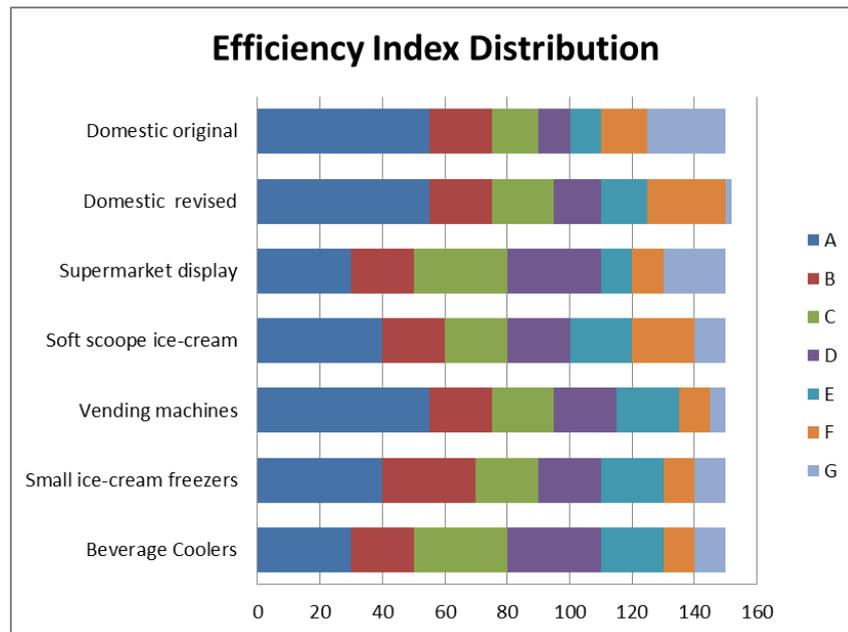
The proposed MEPS levels at 150, 130 and then 110 will reduce the actual classes on the market from A to D within a few years, which is a lost opportunity for the market pull intended for this policy instrument. Once made ambitious, MEPS levels should preferably be aligned with energy class levels.

➔ **Tighten the lower energy class limits to avoid having empty classes a few years after the introduction of the label.**

The table below shows the class ranges of the various product categories, compared to the original domestic refrigeration scheme (from 1995) and a later revision in 2010:

Label Classes	Beverage Cooler	Small ice-cream freezer	Vending machine	Soft scoope ice-cream	Super-market display	Domestic revised	Domestic original
<i>A class</i>	30	40	55	40	30	55	55
Difference A & B	20	30	20	20	20	20	20
Difference B & C	30	20	20	20	30	20	15
Difference C & D	30	20	20	20	30	15	10
Difference D & E	20	20	20	20	10	15	10
Difference E & F	10	10	10	20	10	25	15
Difference F & G	10	10	5	10	20		25

² Topten's position on the draft regulations DG ENER Lot 12 – August 2014 ([link](#))



The original scheme for domestic appliances had for some classes a range of only 10 efficiency index points, which was actually smaller than the measurement tolerance in the standard (being at that time 15%, later reduced to 10%). Such narrow band widths should be avoided and typically the range should cover approximately 20% of the energy efficiency distribution. This means that at an index level of 50 a band width of 10 is acceptable, but at an index of 100 this should be around 20.

For products like the ice cream freezer, the proposed A level is set at 40 and B at 70. This means that the A level consumes only 57% of a product at the B level, or one has to save 43% in energy consumption to jump from B to A. This is a rather big step and does reduce the pull effect of the energy label. Such big steps (percentage wise) are to be avoided.

➔ **Harmonise the efficiency distribution so that class ranges remain at around 20.**

Promote the use of low GWP refrigerants

In the Working Document explanatory note, the European Commission justifies the absence of proposal on refrigerants as follows:

*“It is not judged appropriate to set ecodesign requirements for direct greenhouse gas emissions related to the use of refrigerants, as these account for **not more than 2-3%** of the combined direct and indirect emissions by refrigerated commercial display cabinets covered by this Regulation. Moreover, an increasing use of low global warming potential (GWP) refrigerants registered in the last decade in the EU market, indicates that the manufacturers are already undertaking a gradual substitution towards refrigerants with reduced harmful impact on the environment, without the need of additional policy intervention by means of ecodesign.”*

We consider that the value of 2-3% is a very narrow interpretation:

- It does not include the emissions associated with servicing and disposal of the equipment;
- It is only based on GWP data for a 100 year integrated time horizon (ITH), which is not considered relevant (except in legislation and emissions accounting). The relevant warming impact considers an ITH of 10-30 years and in this context the value of 2-3% should in fact be about 10%. Besides, the remark on manufacturers shifting to low GWP refrigerants would be acceptable only if quantified.

The revised F Gas policy, which foresees the ban on centralised commercial refrigeration equipment with capacity of 40kW or more using HFCs from 2022 can be further supported by Ecodesign measures to stimulate the uptake of low GWP. The exemption stipulated under art 9.2 referring to

possible F gas exceptions suggests that the Ecodesign Directive can continue to regulate refrigerants for a period of up to 5 years after publication of these Ecodesign requirements. Promoting low-GWP refrigerants would have an environmental benefit without a systematic trade-off with energy efficiency as has been identified by both the preparatory studies on professional and commercial refrigeration.

➔ **We therefore call for the introduction of a malus for GWP>500³ from Tier 1 of the regulation.**

Moreover, in order to minimise the impact due to emissions from high GWP refrigerants, all systems using refrigerants with a GWP>150 shall have components and joints that conform to EN 16084:2011 Refrigerating systems and heat pumps — Qualification of tightness of components and joints, and this shall be applicable from Tier 1.

Maintain and strengthen End of life requirements

We fully support the setting of End of Life (EoL) requirements, which apart from easier recovery and recycling will allow for the further reparability and longevity of certain products. The same applies for the provision of technical evidence regarding manual removal and a standardised product information datasheet.

Concerning double regulation and overlap with the WEEE Directive, we would like to highlight, as done by the JRC during the Consultation Forum that Recital 11 of the recast WEEE directive calls for Ecodesign to add a technical description on how to achieve the goals defined by the WEEE Directive. In addition, all appliances covered by Lot 12 may not be under the WEEE scope in all countries, e.g. some large fixed industrial installations may be exempted from WEEE scope and some of the commercial refrigeration systems covered by the Ecodesign and Energy label regulations may fall under this exemption regime. Therefore, we firmly believe that the current proposal shall be used as a tool to support the implementation of the WEEE Directive.

In our opinion, the European Commission could even strengthen its proposal in:

➔ **Making technical evidence available to downstream users too, which would allow for the further reparability and longevity of products;**

➔ **Setting an earlier entry into force of the EoL requirements.**

Safeguard electricity grid stability

As European energy networks incorporate ever higher shares of renewable energy sources, lower predictability of generation necessitates greater demand-side flexibility to cope with increased volatility, which is expensive to manage with traditional means. Smart Grids have been identified as the key tool in easing the transition towards renewables as they can contribute to equalising the load flow and improving voltage and frequency stability.

In addition to a centralised ICT-based control, which has the potential to be costly and complex to maintain, other complementary services are available. Decentralised primary control (frequency droop control, with local measurements) in each generating unit has the possibility to contribute to stable voltage and frequency, with low implementation costs.

System Frequency Control, also known as emulation of the self-regulation effect, is the ability to shift active power consumption to react on local frequency and voltage measurements. To integrate such

³ The latter value has been chosen based on the UNEP TEAP XXIV-7 report which includes HFC/HFC mixtures that are suitable for use in commercial refrigeration.

a function, less than one euro is needed per frequency measuring chip; for example, a simple analogue/digital converter for a fridge. The benchmarks for the macroeconomic benefits are the costs of local grid enhancement per kW extended capacity, and the prices at the balancing power market.

At present, peak load in Europe varies between 350-400GW, with a low load typically in the region of 200GW. To balance the grid, 3GW of primary control (frequency adaptive active power) is required to cover the entire continental Europe synchronous zone, which is needed to substitute the simultaneous tripping of two large power stations. An equal amount, approximately 3 GW, is available as a dispatchable load by cooling devices in Germany alone.

As a majority of power converters, such as refrigerators or battery chargers, use only a limited portion of their technical capability, unused capacities can be harnessed to positively influence the power balance of European grids⁴. Moreover, fridges are appliances in which the load can be interrupted without negatively affecting the user experience.

Therefore, we believe that the Ecodesign Directive has a role to play in promoting the use of this cost-effective solution beneficial to all market participants.

→ Assess the feasibility of setting Ecodesign requirements for the inclusion of System Frequency Controls, at least on the larger commercial refrigeration products. If this is not possible at this stage, reference should at least be made in the recitals or the revision clause of the future regulation.

General comments

Scope

Energy efficiency regulation on refrigerating products is divided under three product groups:

- Lot 1 storage – about to be adopted
- Lot 12 commercial refrigeration – under development
- Lot 13 domestic refrigeration – under revision.

We therefore see this moment as a unique opportunity to make sure that no products are left out and no loopholes created. The situation still seems to be uncertain for several products and we call on the European Commission to take the necessary steps to include the following products in the relevant scopes: vertical static-air cabinets, built-in cabinets, mini bars and wine storage appliances.

More so, we share the UK concerns about a potential loophole in the supermarket segment because of the following wording: *“It does not include the use of cabinet in catering or similar non-retail applications”*. As worded a manufacturer could market their cabinets as catering even though they are intended for supermarket. If there is no difference technically then this exclusion should be removed.

Measurements and calculations

Annex III and IX are supposed to define the measurements and calculations to be used for refrigerated commercial display cabinets. However, there is no standard provided for the testing of cabinets. Without a suitable source – and also using the terminology *“or using other reliable, accurate and reproducible methods that take into account the generally recognised state-of-the-art methods”*, the approach is so open to interpretation that it is not possible to establish reliable, reproducible results.

⁴ Kurth and Welfonder (2006) ‘Importance of the self-regulating effect within power systems’

Kristian Vrana and Hill (2011) ‘A novel control method for dispersed converters providing dynamic frequency response’

Moreover, the test is very vague and as such it is not possible to make a reliable assessment on the cabinet in order to determine the EEI. The temperature conditions are not clear and depending upon what they are intended to be would affect the outcome of the calculations, either in that it would significantly inhibit the ability of cabinets to achieve the minimum EEIs or would render it too easy. Until there is clarity on the temperature requirements it is not possible to fully judge whether the EEIs are acceptable or inadequate.

Review

We support CLASP comment that the proposed review period of 5 years seems too long for this product group since product performance data may change due to the new test standards. Moreover, it should be indicated that the review 5 years after the entry into force will look into the refurbishment market and assess if action is needed.

→ **We therefore call upon the Commission to set a review clause to specifically look at the impact of new standards, quickly after the entry into force of the regulation (e.g. 3 years).**

→ **The review set 5 years after the entry into force should evaluate the need to include refurbished products in the scope.**

Availability of data on soft scoop ice cream freezers

We understand that due to a lack of reliable data on the current performance and improvement potential for soft scoop ice cream freezers, minimum energy efficiency requirements and labelling would not be adopted for this part of the product group at this stage. We believe that such a decision would send a wrong signal to the industry and we therefore call the EC to make proposals based on the existing data.

END

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