EUROPEAN COMMISSION
ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL

Industrial policy and economic analysis
Sustainable Industrial Policy

Brussels, 20 February 2012

DRAFT MINUTES

POSSIBLE ECODESIGN IMPLEMENTING MEASURES AND ENERGY LABELLING REQUIREMENTS FOR PROFESSIONAL REFRIGERATION PRODUCTS

MEETING OF THE CONSULTATION FORUM UNDER ARTICLE 18 OF THE ECODESIGN OF ENERGY-RELATED PRODUCTS DIRECTIVE (2009/125/EC)

Held on 19 January 2012 (09:30 – 17:30)
Centre A. Borschette, Rue Froissart 36, 1040 Brussels

Chair: Kirsi Ekroth-Manssila
Assistants: Laure Baillargeon, Tobias Biermann, Ugo Miretti

1. Welcome, introduction, approval of the agenda

THE CHAIR welcomed the participants and recalled that the objective of this meeting was to get feedback and a clear 'mandate' from CF members on the appropriateness of Ecodesign and Energy Labelling requirements for professional refrigeration products. The vote in the Regulatory Committee was expected to take place in the first quarter of 2013.
THE COMMISSION presented the introduction working document (EDCF-2012-02-19-Doc01). Professional refrigeration products were primarily intended for the storage of foodstuff whereas commercial refrigeration was intended for the display and selling of foodstuff. This distinction was mainly useful for distinguishing between professional storage cabinets (ENTR Lot 1) and commercial display cabinets (ENER Lot 12). The Commission insisted on the role of food hygiene rules, installation and maintenance for these products, as well as the significant share of SMEs in this sector. The aggregated energy consumption of professional refrigeration products was 295TWh in 2008 and estimated to grow up to 344TWh in 2020. The saving potential from the envisaged Ecodesign requirements was estimated at 29TWh in 2020 (including 21 TWh from condensing units). However, estimates needed refinement during impact assessment.
GERMANY, THE NETHERLANDS, THE UNITED KINGDOM, ITALY asked for good coordination in the process for adopting Energy labelling and Ecodesign requirements, to avoid, in particular, that delegated acts under the Energy labelling Directive would be finalised before the vote in the Regulatory Committee on corresponding Ecodesign implementing regulations. **ITALY AND THE NETHERLANDS** suggested putting a priority on some professional refrigeration products, taking into account criteria of Article 15 of the Ecodesign Directive (in

particular, saving potential and sales), in order to avoid that the preparation of some Regulations could delay the swift adoption of others. **THE COMMISSION** explained that running parallel processes with different timings would be very complicated to manage, but that it would aim at avoiding delays.

2. Possible Ecodesign requirements for condensing units

THE COMMISSION presented the working document on condensing units (EDCF-2012-02-19-Doc06 to 06.2 and EDCF-2012-02-19-PPT05).
AUSTRIA stated that the adoption of a new standard on measurement of seasonal efficiency of condensing units should not delay the adoption of Ecodesign requirements. **CEN CENELEC** considered that no distinction should be made between professional and commercial condensing units. However, an update of EN13771 should be envisaged to allow for higher variability of test results as this test protocol was initially created for air-conditioning units also used in B2C markets. **THE NETHERLANDS** agreed that standards made for products sold in large numbers were not necessarily suitable for professional equipments, and asked why noise was covered by Ecodesign requirements for air-conditioners but not for condensing units. The impact assessment should demonstrate how Ecodesign requirements would promote more efficient technologies, including through benchmarks. **THE NETHERLANDS, ITALY, ECOS, GERMANY** supported a formula linking COP/ SEPR to cooling capacity rather than fixed COP or SEPR values by segment (whether linear or curved). **SWEDEN** underlined that the Commission should not be afraid of high market cut-off through Ecodesign requirements (as shown by the example of circulators, with a market cut-off of 95%). Tier-3 requirements could also be envisaged to anticipate on a future review which might turn to be more complicated than expected, except if a solution could be found to allow easier update of the Regulation. The use of CO2 as refrigerant (R744) was very efficient in indirect systems; it could be promoted through legal requirements (e.g. bonus or ban). **THE UNITED KINGDOM** suggested using the ambitious recommendations from the preparatory study as benchmark levels. The use of low GWP refrigerants could at least be supported by information requirements. **AUSTRIA** asked whether energy labelling of chillers and condensing units was envisaged. Any trade-off between energy efficiency and alternative refrigerants such as CO2 should be identified by the impact assessment. **ECOS** supported the introduction of Tier-3 requirements, voluntary benchmarks and legal provisions promoting the use of low GWP refrigerants. **DENMARK** indicated that CO2 was also used in direct systems in supermarkets, but underlined that the market for condensing units also included smaller users. **GERMANY AND INFORSE** supported more ambitious Tier-2 requirements. **ITALY** underlined that Tier-3 requirements, if erroneous or excessively ambitious, could also create undue market shocks.
ASERCOM indicated that the use of CO2 as refrigerant was suitable in colder climates and reminded that condensing units were tested with ambient temperature +32°c. In addition, condensing units were sold as incomplete systems, and therefore tested according to a pre-set evaporating temperature (-10°c or -35°c). Once installed, the evaporating temperature might actually be higher. Besides, suitable compressors for CO2 condensing units were not available yet. The market for refrigeration systems in supermarkets could hardly be compared with the market for condensing units. **EUROVENT** suggested that COP or SEPR could be calculated and not necessarily tested in order to decrease testing costs. **THE NETHERLANDS** opposed to this suggestion, and asked that refrigerants would be addressed at least through information requirements.

THE COMMISSION summarised and concluded that the draft Regulation would not distinguish between "professional" and "commercial" condensing units. Noise was not relevant at first sight (Machinery Directive, no data) but this should be confirmed after impact assessment; information requirements could be envisaged if relevant. The impact assessment would need to further investigate the impacts on costs, technologies and energy savings of the envisaged requirements, so as to adjust the stringency of Tier-1 and Tier-2 requirements if necessary, taking into account, in particular, the best available technology (or product) and the least life cycle cost. Voluntary benchmarks, Tier-3 requirements and labelling would have to be considered among possible policy options. A more in-depth technical analysis of the refrigerants issue was still necessary, including availability and market penetration of technologies, their costs, related safety issues, other technical constrains and any trade-off with energy efficiency. This was necessary to properly impact assess the various policy options (ban, bonus, information requirements). The impact assessment would also consider the appropriateness of a formula linking COP/ SEPR to cooling capacity. The Commission indicated that COP and SEPR could be calculated when basing on "representative models" (in that case, the representative model would have to be tested but COP and SEPR values for "equivalent" models could be derived from these test results).

3. Possible Ecodesign requirements for refrigeration process chillers

THE COMMISSION presented the working document on refrigeration process chillers (EDCF-2012-02-19-Doc05 to 05.2 and EDCF-2012-02-19-PPT04).
THE NETHERLANDS, BELGIUM, ITALY, SWEDEN stated that the data presented was not sufficient to substantiate the proposed Ecodesign requirements. **THE NETHERLANDS** recommended that the Commission envisaged the adoption of information requirements only, in case the lack of data for chillers would risk delaying the decision-making process. **ITALY** underlined that information requirements generated administrative burden for manufacturers and market surveillance authorities. Such burden was justified only if sufficient energy savings were achieved through combined information and performance requirements. **THE NETHERLANDS** replied that providing information on energy performance was usually a contractual obligation on B2B markets anyway, and that a harmonised standard was already available for chillers. The Commission should confirm whether information requirements implied product testing by market surveillance authorities or merely a check that required information was provided in product technical documentation. **SWEDEN** indicated that the burden of the proof was on manufacturers to demonstrate the accuracy of the information contained in product documentation. Information requirements were useful to allow designers and manufacturers to compare and thus optimise their products. The existing measurement standard was suitable, provided tolerances would be clearly specified. In Sweden, chillers were used as an alternative to condensing units to reduce refrigerants charges. **BELGIUM** added that data was only available for HFC models, whereas HC models were already being used in Nordic countries. More data should be provided on the energy efficiency of models placed on the market today, but also on the link between refrigerants and energy consumption. **NORWAY** recalled that the base case was using R134a and R404a, but that the use of low GWP refrigerant such as R290 allowed higher energy efficiency. **DENMARK** recommended that envisaged requirements would be compared to existing minimum requirements in Australia and New Zealand. **ASERCOM, EUROVENT** explained that the lack of data had been the very reason for establishing a joint expert group, and that industry was supportive of minimum performance requirements. Performance data was not available, but the group had assessed the feasibility of minimum requirements on the basis of a detailed

thermodynamic analysis. **ECOS** underlined the risk of adopting not very ambitious minimum performance requirements due to lack of data. These requirements would stay in place until the review in 4 years. This would constitute a missed opportunity for energy savings. **CEN CENELEC** stated that chillers for air-conditioning and for refrigeration at high operating temperature (+6°c) had identical technical features and that manufacturers did not know which application their products were intended for. Additional testing for refrigeration chillers was not useful and, besides, SEPR rating conditions were not suitable for air-conditioning chillers. Verification tolerances for air-conditioning chillers were 5%. **ASERCOM** replied that a single measurement standard could not be applied to air-conditioning and refrigeration chillers due to different load profiles and cooling demand over the year.

THE COMMISSION summarised and concluded that the impact assessment would look for additional data on energy consumption of models currently sold on the EU market, and/or that the thermodynamic and technical analysis would be beefed up. Additional background on low GWP refrigerants would be sought, in particular on the link between refrigerants and energy consumption. The intention remained to adopt minimum performance requirements for chillers, on the basis of a specific measurement standard for refrigeration applications[1]. The impact assessment would include some international benchmarking. Administrative burden would be investigated through a specific SME consultation. High temperature chillers for air-conditioning would fall in the scope of ENTR Lot 6 whereas high temperature chillers for refrigeration fell in the scope of ENTR Lot 1.

4. Possible Ecodesign and Energy labelling requirements for professional refrigerated cabinets

THE COMMISSION presented the working document on professional refrigerated cabinets (EDCF-2012-02-19-Doc02 and EDCF-2012-02-19-PPT01).

AUSTRIA recommended using a single measurement standard (EN 23953) for commercial display cabinets and professional storage cabinets with transparent doors. The Option 2 formula needed refinement but was preferable to Option 1.
EFCEM suggested paying special attention to testing costs due to the significant proportion of SME assemblers and because of the high degree of customisation of products. Besides, manufacturers had to ensure that their products deliver the expected functionality also in extreme ambient conditions. The product data from the English and Danish voluntary schemes (measured with EN441) was not representative of the market. EFCEM was going to submit additional data and an alternative proposal of measurement method. **EUROVENT** estimated that testing results under EN441 and EN23953 were equivalent. But the door opening protocol in EN23953 was not suitable for professional cabinets. Option 1 seemed more convenient for users and more in line with the English scheme. Option 2 included inconsistencies. **THE NETHERLANDS** supported Option 2. International benchmarking should be beefed up. Article 4(2) of the Ecodesign Regulation on household washing machines could serve as an example how to deal with 'equivalent' models to reduce testing costs to manufacturers. According to data presented by **ITALY** (EDCF-2012-02-19-PPT01.2), the base case was overestimated. Data showed

[1] In case a model is intended for use in both air-conditioning and refrigeration applications, this model should therefore be tested both with EN14511/EN 14825 (SEER) and with the specific refrigeration standard (SEPR).

that it was appropriate to differentiate products according to design and operating temperature, but not to volume. Therefore, Option 2 could be acceptable if refined with 4 sub-categories. The proposed requirements were not realistic when compared to market reality, in particular for under-counter models and chest freezers. The case of chest freezers deserved special attention to avoid inconsistencies or loopholes in legislation. The technical features of domestic and professional models were almost identical, but these would be covered by different Ecodesign requirements and measurement standards. **BELGIUM** supported Option 2. Besides, meters displaying energy consumption in real time should be required on all models. **DENMARK** acknowledged that data from the Danish voluntary scheme was not representative of the market. Minimum performance requirements and energy labelling requirements should be made more stringent. The energy consumption measured with EN23953 was ~10% lower than with EN441, and results of comparative tests would be submitted to the Commission. However, these comparative results were available for energy efficient models only, and might not be valid for other models. The Option 2 formula could be linear or curved against volume, and this should be elaborated on the basis of product data. The method for net volume measurement and calculation was not sufficiently clear. **SWEDEN, ECOS** supported the adoption of minimum performance requirements and energy labelling requirements, but these should be made more stringent. **ECOS** requested that the use of low GWP refrigerants would be incentivised and asked why noise was submitted to information requirements for domestic fridges and not for professional fridges. **EFCEM** replied that noise was not problematic in professional environments and that testing noise performance was excessively costly.

THE COMMISSION summarised and concluded that minimum performance requirements and labelling classes would be refined during impact assessment, taking into account new data submitted in the next few weeks –data should first be made comparable. Based on the discussion, the intention was to refine Option 2 to eliminate inconsistencies, and elaborate a formula against volume and with 4 sub-categories according to design and operating temperature. Energy consumption would be measured according to a standard specific to professional refrigerated cabinets. Additional evidence should be sought on low GWP refrigerants. It was intended to beef up international benchmarking. The calculation and measurement of net volume, the special case of chest freezers and the possible general requirement on energy meters would also be analysed in more details. Professional storage cabinets with transparent doors could be distinguished from commercial display cabinets according to intended use. It was not intended to exclude these from the scope of the future Regulation. However, noise did not seem to deserve further consideration.

5. Possible Ecodesign requirements for blast cabinets

THE COMMISSION presented the working document on blast cabinets (EDCF-2012-02-19-Doc03 and EDCF-2012-02-19-PPT02).

ECOS considered that the data presented was not sufficient to substantiate the proposed Tier-1 requirements. In addition, no benchmark and no Tier-2 requirements were proposed. A mid-term target was at least necessary. **DENMARK** broadly supported the proposed approach and the introduction of minimum performance requirements. However, the proposed test material (smashed potatoes) should be changed. **THE UNITED KINGDOM** suggested distinguishing between “pass-through” models and “conveyer belt” models, and to set an upper threshold in terms of capacity to better define the scope of the Regulation. The Commission selected the English temperature

cycle as a reference for testing. However, many models were designed for use in other EU countries where less stringent temperature settings were tolerated. These models might not be able to reach the English temperature requirements. **ECOS** insisted that the future harmonised standard should be uniform and reproducible. The French standard AC D40-003 was a suitable hygiene standard but might need adaptation for energy consumption measurement. **SWEDEN** indicated that models placed on the market in Sweden and Finland were designed to comply with local food safety rules, with much lower temperature requirements compared to the English cycle. These might not be able to comply with requirements based on the English cycle, or would be put at a disadvantage. The Commission could propose information requirements only as a first step. **EFCEM** indicated that the English cycle was defined by Health Guidelines and was not mandatory in the UK. The Regulation could base on another cycle, as a compromise. However, the difference between plug-in blast cabinets (integral condenser) and remote blast cabinets (attached to a remote condensing unit) should be carefully taken into account in the test protocol and in terms of measured energy consumption. The proposed minimum performance requirements were too stringent. **BELGIUM** asked how new data could be obtained, and whether energy labelling was envisaged. **AUSTRIA, THE NETHERLANDS** suggested not proposing any Ecodesign Regulation for blast cabinets. **EFCEM** indicated that some test results with the French standard could be made available. **ECOS** supported the adoption of Ecodesign requirements. Sales of blast cabinets followed a growing trend and would increase in the future. **SWEDEN** indicated that national regulations should be further analysed. Ecodesign requirements might not be adequate if national regulations were too diverging. However, Sweden supported the introduction of Ecodesign requirements in principle if a proper harmonised standard could be elaborated. **BELGIUM** supported the adoption of an Ecodesign regulation.

THE COMMISSION summarised and concluded that new data would be looked for during impact assessment. If no data was available, mandatory information requirements on the basis of a proper harmonised standard could be an acceptable first step, before a review in maximum 4 years, or the Commission could consider "no action" as the preferred policy option. The French standard seemed acceptable for the bulk of the test protocol, but some further discussion would be held on the adequate temperature cycle and on the test material. In addition, national regulations on food hygiene would be further analysed.

6 Possible Ecodesign requirements for walk-in cold rooms

THE COMMISSION presented the working document on walk-in cold rooms (EDCF-2012-02-19-Doc04 and EDCF-2012-02-19-PPT03).

EFCEM did support the introduction of insulation requirements (U values). **EUROVENT** supported the introduction of insulation requirements. However, the U values associated with various thicknesses as presented in the working document needed to be corrected. **NORWAY, DENMARK, ECOS** supported more stringent U values. **GERMANY** supported more stringent U values for doors and windows. **SWEDEN, ECOS** supported the introduction of Ecodesign requirements for cold rooms in general. Sweden, in particular, recommended more stringent U values in low temperature cold rooms – these should correspond to at least 160-mm thickness. Besides, consistency between proposed U values and national building regulations should be checked. **DENMARK** offered to share data on insulation in the residential sector. **ECOS** stated that the overall level of ambition of the working document was not sufficient, with no Tier-2 requirements and no benchmarks, despite the availability of some highly

performing technologies such as vacuum insulation panels. The cost of insulation much depended on the considered lifetime (much longer for vacuum insulation panels than for polyurethane). **GERMANY** stated that voluntary benchmarks should be considered. **NORWAY** indicated that many cold rooms were renovated rather than replaced and wondered to which extent this could be considered under the Ecodesign Directive. **THE UNITED KINGDOM** supported the use of gross storage volume (rather than net storage volume) and 1% tolerances for all thermal bridges values. The recent US test protocol on walk-in cold rooms should also be considered as a valuable precedent. Beer cellars, hence any cold room operating above 8°c, should be excluded from the scope of the Regulation. **EUROVENT** supported the use of gross storage volume and suggested to differentiate between several categories of cold rooms according to volume. Proposed U values were slightly too stringent and alternative proposals would be submitted to the Commission. Besides, U values should refer to initial lambda values (as opposed to aged lambda values). **PAN AND PRO EUROPE** offered to provide additional data on U values of insulating panels. The aged lambda value was already dealt with under EN14509. Vacuum insulated panels were not covered by existing standards.
ITALY, THE UNITED KINGDOM, HUNGARY, ECOS wondered how market surveillance could work in practice, notably for checking the proper construction of a kit or the proper installation of a customised cold room. **ECOS** observed that installers would be in charge of placing on the market and CE-marking for customised cold rooms. **ITALY** underlined that cold rooms could not be withdrawn from the market if not compliant, especially if forming part of the building.

THE COMMISSION summarised and concluded that it would be checked whether walk-in cold rooms usually form part of the building and whether and how these products were addressed by national building regulations. The intention was to go ahead with mandatory requirements on insulation (U values), installation requirements and information requirements. However, additional data would be looked for during impact assessment in order to ensure that U-value requirements were adequate. Depending on data availability, benchmarks and Tier-2 requirements could be envisaged. The Commission agreed to use gross storage volume as a basis. Significant standardisation work was necessary (including for example to cover vacuum panels with existing standards). An informal meeting with standardisers and representatives of industry would be organised soon to discuss standardisation needs on insulation and refrigeration efficiency.