

Title of the measure:	EU1 Energy efficiency requirements for household electric refrigerators, freezers and combinations thereof (96/57/EC)
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General description

This Directive was adopted by the European Parliament on 3rd September 1996 and is related to energy efficiency in domestic refrigeration appliances. The market of household refrigerating appliances is currently governed by this Directive and the Directive 94/2/EC on "Energy labelling of household refrigerators" (amended in 2003 by the new Directive 2003/66/EC).

The equipment covered with this Directive is: new electric mains-operated household refrigerators, frozen food storage cabinets, food freezers and combinations.

Appliances which can also use other energy sources, particularly accumulators, and household refrigeration appliances working on the absorption principle and appliances manufactured on a one-off basis shall be excluded.

The aim of this directive is to assure that all the covered equipment placed in the market has a less than or equal electricity consumption to the maximum allowable electricity consumption value for its category. In order to calculate the maximum consumption, a method is described that takes account of the category of appliance to which it belongs, its volume and the energy efficiency of its construction, and the difference between ambient temperature and the temperature inside the appliance (definitions according to European Standard EN 153 of July 1995 laid down by the European Committee for Standardization). If the electricity consumption of a refrigeration appliance submitted for verification is less than or equal to E_{max} (the maximum allowable electricity consumption value for its category, as defined above), plus 15 %, the appliance is certified as conforming to the electricity consumption requirements of this Directive. If not, the electricity consumption of further three appliances must be measured. If the arithmetic mean of the electricity consumptions of these three appliances is less than or equal to E_{max} plus 10 %, the appliance is certified as conforming to the electricity consumption requirements of this Directive.

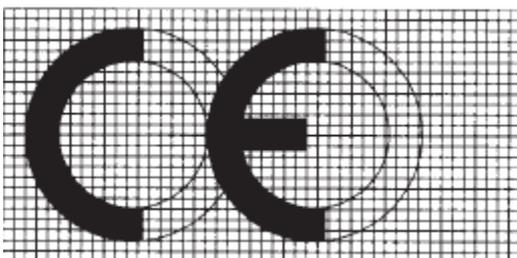
Conformity assessment procedures and the obligations relating to the 'CE' marking:

Unless they have evidence to the contrary, Member States shall presume that refrigeration appliances bearing the 'CE' marking comply with all the provisions of this Directive.

Procedure whereby the manufacturer ensures and declares that the refrigeration appliance satisfies the relevant requirements of this Directive is:

The manufacturer must affix the 'CE' marking to each refrigeration appliance which he manufactures, draw up a written declaration of conformity and a technical documentation. This technical documentation must cover the design, manufacture and operation of the refrigeration appliance (included the electricity consumption) and must be kept by the manufacturer for a period of not less than three years from the date on which the last appliance has been manufactured.

The conformity marking shall consist of the initials 'CE' taking the following form:



Impact evaluation

The effect of the two directives (94/2/EC and 96/57/EC) of the market of household refrigerating appliances is bundled together and it is not self-evident to distinguish the respective results. Anyhow it is possible to state that the pull effect of the label Directive 94/2 can be set at a value between 13 - 18% saving, while the additional effect of the 96/57 Directive ranges within 8 - 14% saving hence resulting in a total combined effect of 27% saving in the period from year 1990-92 to 1999.

	1999	2001	2002	2003	2004
Total weighted average energy efficiency index	74,11	69,58	67,26	64,38	60,35
Total production (x1000)	15,315	17,503	18,181	20,254	20,291

Figure 1: Energy Efficiency index and production of refrigerators and freezers produced/imported for EU market (Notary collected CECED data year 2004)

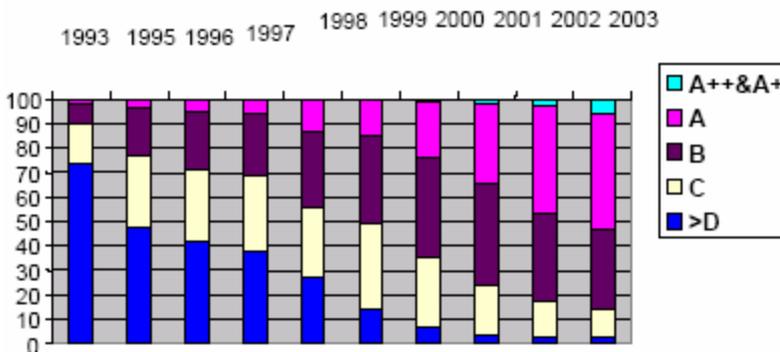


Figure 2: Energy label classes' distribution (1993-2003)

From 1999 to 2003, it has been registered a transformation in the profile of the appliances sold: class A- or-better appliances increased from 15% to 53%.

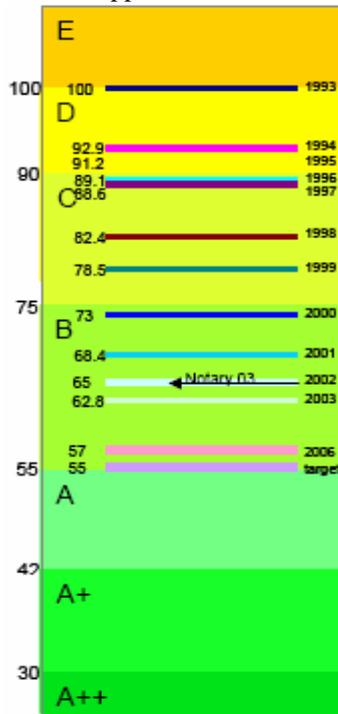
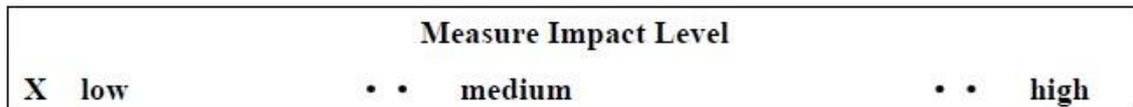


Figure 3: Energy efficiency progress achieved by manufacturers (1999-2003) (from CECED technical data base)

The improvement has been of about 3% per year, with an apparently constant progress. 1997 records a very limited improvement but 1998 compensates this. This anomaly may be originated by the seasonality of data collection.

According to SEC(2009) 1021 and SEC(2009) 1020, provisions of 96/57/EC have long been overtaken by innovations and can now be considered obsolete. With existing cost-effective technology, improvement potential of household refrigerating appliances is between 3 to 6 TWh depending on the sub-options in 2020 compared to BaU scenario. In 2025, the savings potential may increase 14 TWh compared to BaU.



References

- Directive 96/57/EC of the European Parliament and of the Council of 3 September 1996 on energy efficiency requirements for household electric refrigerators, freezers and combinations thereof (Official Journal L 236, 18/09/1996 P. 0036 – 0043)
<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31996L0057&from=en>
- CECED Unilateral Commitment on reducing energy consumption of household refrigerators and freezers (1st Annual report for 2003 to the Commission of the European Communities)
- CECED Cold Appliances Unilateral Industry Commitment - a combination of „hard” and „fleet“ targets for efficiency increase (Friedrich Arnold; Bosch and Siemens Hausgeräte GmbH)
- http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2009/sec_2009_1020_en.pdf
- http://ec.europa.eu/energy/efficiency/ecodesign/doc/legislation/sec_2009_1021_en.pdf