

**Proposal for a European Parliament and Council Directive on energy efficiency requirements for household electric refrigerators, freezers and their combinations**

(94/C 390/07)

(Text with EEA relevance)

COM(94) 521 final — 94/0272(COD)

(Submitted by the Commission on 18 January 1995)

THE EUROPEAN PARLIAMENT AND THE COUNCIL  
OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community and in particular Article 100a thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Whereas it is important to promote measures aimed at the progressive establishment of the internal market; whereas the internal market comprises an area without internal frontiers, in which the free circulation of goods, persons, services and capital is ensured;

Whereas the Council resolution of 15 January 1985 on the improvement of energy-saving programmes in the Member States<sup>(1)</sup> invited Member States to pursue and, where necessary, increase their efforts to promote the more rational use of energy by the further development of integrated energy-saving policies.

Whereas the Council resolution of 16 September 1986<sup>(2)</sup> called for new Community energy policy objectives for 1995 and convergence of the policies of the Member States, and in particular the objective of improving the efficiency of final energy demand (the ratio of final energy demand to gross national product) by at least 20 % by 1995;

Whereas domestic refrigeration appliances account for a significant share of domestic electricity consumption by households in the Community and thus of total electricity consumption; whereas the electricity consumption of different models of refrigeration appliances available for purchase in the Community with the same volume and features, that is to say their energy efficiencies, vary very considerably;

Whereas several Member States are on the point of adopting provisions relating to the efficiency

performance of domestic refrigerators and freezers, which will create barriers to trade of these products in the Community;

Whereas it is appropriate to take as a base a high level of protection in measures for the approximation of the provisions laid down by law, regulation or administration action in Member States and concerning health, safety, environmental protection and consumer protection; whereas this Directive ensures a high level of protection both for the environment and the consumer, in aiming at a significant improvement of the energy efficiency of these appliances;

Whereas the adoption of such measures falls within Community competence and whereas the requirements of this Directive do not exceed those necessary to achieve its objectives, thus conforming to the requirements of Article 3b of the Treaty;

Whereas, moreover, Article 130r of the Treaty calls for the protection and improvement of the environment and prudent and rational utilization of natural resources; whereas electricity generation and use accounts for about 30 % of man-made carbon dioxides (CO<sub>2</sub>) emissions and about 35 % of primary energy use in the Community, and whereas these percentages are increasing;

Whereas, furthermore, Council Decision 89/364/EEC<sup>(3)</sup> which establishes a Community action programme for improving the efficiency of electricity use has as its twin objectives encouraging consumers to favour appliances and equipment with high electrical efficiency, as well as improving the efficiency of appliances and equipment;

Whereas on 29 October 1990 the Council set an objective of stabilizing carbon dioxide (CO<sub>2</sub>) emissions in the Community at 1990 levels by the year 2000;

Whereas Council Decision 91/565(EEC)<sup>(4)</sup> established a programme (the SAVE programme) to support and further promote energy efficiency in the Community;

<sup>(1)</sup> OJ No C 20, 22. 1. 1985, p. 1.

<sup>(2)</sup> OJ No C 241, 25. 9. 1986, p. 1.

<sup>(3)</sup> OJ No L 157, 9. 6. 1989, p. 32.

<sup>(4)</sup> OJ No L 307, 8. 11. 1991, p. 34.

Whereas the energy efficiency measures incorporated in the more efficient models of refrigeration appliances available do not excessively increase their production costs and such measures can repay their initial cost in terms of electricity savings within a few years or less; whereas this calculation does not take into account the added benefit of the avoided external costs of electricity generation, such as the emission of carbon dioxide (CO<sub>2</sub>) and other pollutants;

Whereas Council Directive 92/75/EEC<sup>(1)</sup> (the framework directive) and Commission Directive 94/2/EC<sup>(2)</sup> (applying Directive 92/75/EEC) which require the compulsory labelling of appliances and the provision in other forms of energy consumption information will increase consumer's awareness of the energy efficiency of domestic refrigeration appliances; whereas this measure will therefore also heighten competition on the energy efficiency of appliances above the standards required by this Directive; whereas however the provision of information to consumers without standards would have only a partial effect in terms of improving the average overall efficiency of appliances sold;

Whereas this Directive, which is aimed at eliminating technical barriers with regard to the energy efficiency of domestic refrigeration appliances must follow the 'new approach' established by the Council resolution of 7 May 1985<sup>(3)</sup> which specifically lays down that legislative harmonization is limited to the adoption, by means of directives, of the essential requirements with which products put on the market must conform;

Whereas regard should be had to Council Decision 93/465/EEC<sup>(4)</sup> which concerns the procedures for conformity assessment intended to be used in the technical harmonization directives;

Whereas in the interest of international trade, international standards should be used wherever appropriate; whereas the electricity consumption of a refrigeration appliance is defined by the European Committee for Standardization Standard EN 153 of May 1990 which is based on an international standard;

Whereas domestic refrigeration appliances complying with the energy efficiency requirements of this Directive should bear the CE marking and associated information,

in order to enable them to move freely, and to be put into service in accordance with their intended purpose within the Community;

Whereas this Directive is confined to domestic refrigeration appliances for foodstuffs, excluding those with an insignificant use of energy in total, that is, domestic refrigeration appliances supplied by mains electricity; whereas commercially used refrigeration equipment is much more varied and not appropriate for inclusion in this Directive,

HAVE ADOPTED THIS DIRECTIVE:

#### *Article 1*

This Directive shall apply to electric mains operated household refrigerators, frozen food storage cabinets, food freezers, and combinations of these as defined in Annex I and referred to hereafter as 'refrigeration appliances'. However refrigeration appliances working on the absorption principle shall be excluded.

#### *Article 2*

Member States shall take all appropriate measures to ensure that refrigeration appliances can be placed on the market and put into service only if the electricity consumption of the appliance type to which that appliance belongs is less than or equal to the maximum allowable electricity consumption value as calculated according to the procedures defined in Annex I. Refrigeration appliances shall be considered to belong to the same type, referred to in this Directive as 'appliance type', if they are produced by the same manufacturer or under licence by a different manufacturer and differ only in aspects which do not significantly affect their energy consumption in use in any way.

#### *Article 3*

1. Member States may not prohibit, restrict or impede the placing on the market or putting into service on their territory of refrigeration appliances which bear the CE marking attesting to their conformity with all the provisions of this Directive.

2. Member States shall presume that refrigeration appliances bearing the CE marking required under Article 5 comply with all the provisions of this Directive.

3. At trade fairs, exhibitions, demonstrations, etc., Member States shall not prevent the showing of a refrigeration appliance which does not conform with the provisions of this Directive, provided that a visible sign

<sup>(1)</sup> OJ No L 297, 13. 10. 1992, p. 16.

<sup>(2)</sup> OJ No L 45, 17. 2. 1994, p. 1.

<sup>(3)</sup> OJ No C 136, 4. 6. 1985, p. 1.

<sup>(4)</sup> OJ No L 220, 30. 8. 1993, p. 23.

clearly indicates that such an appliance does not so conform and that it is not for sale until it has been brought into conformity by the manufacturer or his authorized representative established in the Community.

#### *Article 4*

The conformity assessment procedures to be applied to a given type of refrigeration appliance in order to affix the CE marking are indicated in Annex II.

#### *Article 5*

The CE marking shall consist of the initials 'CE'. The form of the marking to be used is shown in Annex III. The CE marking shall be affixed to the refrigeration appliance distinctly and visibly.

#### *Article 6*

1. Where a Member State establishes that the CE marking has been affixed unduly, the manufacturer or his authorized representative established within the Community shall be obliged to make the product comply and to end the infringement under the conditions imposed by the Member State;

2. Where non-conformity continues, the Member State must take all appropriate measures to restrict or prohibit the placing on the market on the product in question or to ensure that it is withdrawn from the market.

#### *Article 7*

Any decision taken pursuant to this Directive which includes any restriction on the placing on the market and/or putting into service of refrigeration appliances shall state the precise grounds on which it is based. It shall be notified without delay to the party concerned, which shall at the same time be informed of the legal remedies available to it under the laws in force in the Member State in question and of the time limits to which such remedies are subject.

#### *Article 8*

Before the expiry of a period of four years from the adoption of this Directive, the Commission in consul-

tation with interested parties shall make an assessment of the results obtained and expected. Following this assessment, the Commission shall consider the need for a new proposal for Community legislation to establish a second set of energy efficiency standards for household refrigeration appliances. If such a proposal is made, its energy efficiency standards and their timing for entry into force will be based on energy efficiency levels which can be economically and technically justified in the light of the circumstances at the time of the proposal. The proposal may also contain any other provisions judged necessary to improve the effectiveness of this Directive.

#### *Article 9*

(assumes European Parliament and Council final adoption early 1995)

1. Before 1 January 1996, Member States shall adopt and publish the laws, regulations and administrative provisions necessary to comply with this Directive. They shall immediately inform the Commission thereof.

Member States shall apply such provisions as from 1 January 2000.

When Member States adopt these provisions, these shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such reference shall be adopted by Member States.

2. Member States shall communicate to the Commission the texts of the provisions of national law which they adopt in the field covered by this Directive.

3. Member States shall, during the period up to 1 January 2000, permit the placing on the market and/or the putting into service of refrigeration appliances which comply with the regulations in force in the Member States at the date of adoption of this Directive.

#### *Article 10*

This Directive shall enter into force on the 20th day following that of its publication in the *Official Journal of the European Communities*.

#### *Article 11*

This Directive is addressed to the Member States.

## ANNEX I

**Procedures for calculating the maximum allowable electricity consumption for a given refrigeration appliance type and for the verification of conformity therewith**

The electricity consumption of a refrigeration appliance (which may be expressed as kWh per 24 hours) is a function of the category of appliance to which it belongs, (e.g. 1 star refrigerator, chest freezer, etc.), its volume, and the energy efficiency of its construction, (e.g. thickness of insulation, compressor efficiency, etc.). In setting energy efficiency standards therefore, allowances must be made for the main exogenous factors which influence energy consumption (i.e. the category of the appliance and its volume). For this reason the maximum allowable electricity consumptions of a given refrigeration appliance type (\*) are defined by a linear equation which is a function of the volume of the appliance, with different equations defined for each category of appliance.

To calculate the maximum allowable electricity consumption of a given appliance type, it must therefore first be allocated to the appropriate category from the following list:

Category	Description
1	Refrigerator without frozen food compartment (*)
2	Refrigerator with 1 star frozen food compartment
3	Refrigerator with 2 star frozen food compartment
4	Refrigerator with 3 star frozen food compartment
5	Refrigerator with 4 star freezer
6	Refrigerator-Cellar
7	Chest freezer
8	Upright freezer

Because refrigeration appliances contain different compartments with different maintained temperatures, (which will clearly influence their electricity consumption), the maximum allowable electricity consumption is defined in fact as a function of the adjusted volume, which is a weighted sum of the volumes of the different compartments.

Thus, for the purposes of this Directive, the adjusted volume ( $V_{adj}$ ) of a refrigeration appliance is defined as:

$$V_{adj} = \sum V_c \times W_c \times F_c$$

where  $V_c$  is the net volume of a given type of compartment in the appliance.  $W_c$  is the weighting coefficient for that type of compartment and  $F_c$  is a factor which equals 1,2 for no frost compartments and 1 for other compartments. Both the adjusted volume and the net volumes are in litres. The weighting coefficients for the different types of compartment are:

$W_c$ (weighting coefficient)	
Cellar compartment	0,75
Fresh food compartment	1,00
0 °C compartment	1,25
0 star compartment	1,25
1 star compartment	1,55
2 star compartment	1,85
3 and 4 star compartment	2,15

(\*) The definition of refrigeration appliances belonging to the same type is given in Article 2.

(\*) Any compartment with a temperature below  $-6$  °C.

The maximum allowable electricity consumption  $E_{\max}$  (in kWh per 24 hours expressed to two decimal places), for an appliance type with adjusted volume  $V_{\text{adj}}$  for each appliance category is defined by the following equations:

Category	Description	$E_{\max}$ (kWh/24 hours)
1	Refrigerator w/o FFC (*)	$(0,225 \times V_{\text{adj}} + 237) / 365$
2	Refrigerator with 1 star FFC	$(0,599 \times V_{\text{adj}} + 178) / 365$
3	Refrigerator with 2 star FFC	$(0,437 \times V_{\text{adj}} + 238) / 365$
4	Refrigerator with 3 star FFC	$(0,616 \times V_{\text{adj}} + 221) / 365$
5	Refrigerator with 4 star freezer	$(0,778 \times V_{\text{adj}} + 303) / 365$
6	Refrigerator-Cellar	$(0,225 \times V_{\text{adj}} + 237) / 365$
7	Chest freezer	$(0,480 \times V_{\text{adj}} + 195) / 365$
8	Upright freezer	$(0,478 \times V_{\text{adj}} + 289) / 365$

*Test Procedures for verifying whether an appliance type conforms to the electricity consumption requirements of this Directive*

If the electricity consumption of a refrigeration appliance representative of the production of the appliance type subject to verification is less than or equal to the maximum allowable electricity consumption value  $E_{\max}$  as defined above plus 15 %, the appliance type to which it belongs is confirmed as conforming to the electricity consumption requirements of this Directive. If the electricity consumption of the appliance is greater than the maximum allowable electricity consumption value plus 15 %, the electricity consumption of a further three appliances of the same type shall be measured. If the arithmetic mean of the electricity consumptions of these three appliances is less than or equal to the maximum allowable electricity consumption value plus 10 %, the appliance type to which they belong is confirmed as conforming to the electricity consumption requirements of this Directive. If the arithmetic mean exceeds the maximum allowable electricity consumption value plus 10 %, the appliance type to which they belong shall be judged not to conform to the electricity consumption requirements of this Directive.

*Definitions*

The terms used in this Annex are defined as in European Standard of the European Committee for Standardization EN 153 of May 1990.

(\*) Frozen food compartment.

## ANNEX II

### Conformity assessment procedures (Module A)

1. This module describes the procedure whereby the manufacturer or his authorized representative established within the Community, who carries out the obligations laid down in point 2, ensures and declares that the refrigeration appliance type (\*) satisfies the relevant requirements of this Directive. The manufacturer shall affix the CE mark to all refrigeration appliances of this type he manufactures and draw up a written declaration of their conformity.
2. The manufacturer shall establish the technical documentation described in paragraph 3 and he or his authorized representative established within the Community shall keep it, for a period ending not less than three years after the last of the refrigeration appliance type has been manufactured, at the disposal of the relevant national authorities for inspection purposes.

Where neither the manufacturer nor his authorized representative is established within the Community, the obligation to keep the technical documentation available shall be the responsibility of the person who places the refrigeration appliance type on the Community market.

(\*) The definition of a refrigeration appliance type is given in Article 2.

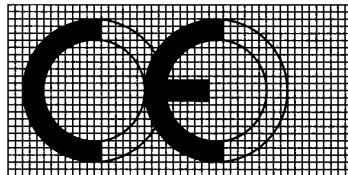
3. Technical documentation shall enable an assessment to be made of the conformity of the refrigeration appliance type with the relevant requirements of this Directive. It shall cover the design, manufacture and operation of the refrigeration appliance type and shall contain as far as is relevant for assessment:
  - (i) the name and the address of the manufacturer;
  - (ii) a general description of the model sufficient for it to be uniquely identified;
  - (iii) information, including drawings as relevant, on the main design features of the model and in particular on items which appreciably affect its electricity consumption, such as dimensions, volume(s), compressor characteristics, special features, etc.;
  - (iv) the operating instructions, if any;
  - (v) reports of electricity consumption measurement tests carried out as required by paragraph 5;
  - (vi) details of the conformity of these measurement tests as compared to the energy consumption requirements as set out in Annex I.
4. Where differences between models are such that they have no significant effect on their energy consumption, that is they belong to the same appliance type as defined in Article 2, manufacturers may use the data from a 'base model'. In this case the technical documentation shall consist of the information listed above for the base model, supplemented for each other model produced by the manufacturer by a description of the differences between that model and the base model. Technical documentation established for other Community legislation may be used in so far as it meets the requirements of this paragraph.
5. Manufacturers of refrigeration appliances shall be responsible for establishing the electricity consumption of each refrigeration appliance type covered by this Directive according to the procedures specified in European Standard EN 153, as well as the appliance type's conformity with the requirements of Article 2.
6. The manufacturer or his authorized representative shall keep a copy of the declaration of conformity with the technical documentation.
7. The manufacturer shall take all measures necessary in order that the manufacturing process shall ensure that the manufactured refrigeration appliances comply with the technical documentation referred to in point 2 and with the relevant requirements of the Directive.

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### ANNEX III

#### CE conformity marking

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



If the marking is reduced or enlarged the proportions given in the above graduated drawing must be respected.

The various components of the CE marking must have substantially the same vertical dimension, which may not be less than 5 mm.

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