Proposal for a Directive of the European Parliament and of the Council on the energy performance of buildings

(2001/C 213 E/15)

(Text with EEA relevance)

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(Submitted by the Commission on 15 May 2001)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175 thereof,

Having regard to the proposal from the Commission,

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

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

(1) Article 6 of the Treaty requires environmental protection requirements to be integrated into the definition and implementation of Community policies and actions.

(2) The natural resources, to whose prudent and rational utilisation Article 174 of the Treaty refers, include oil products, natural gas and solid fuels, which are essential sources of energy but also the leading sources of carbon dioxide emissions.

(3) Increased energy efficiency constitutes an important part of the package of policies and measures needed to comply with the Kyoto Protocol, and should appear in any policy package to meet further commitments.

(4) Demand management of energy is an important tool enabling the Community to influence the global energy market and hence the security of energy supply in the medium and long term.

(5) The Council in its Conclusions of 30 May 2000 and of 5 December 2000 [1] endorsed the Commission's Action Plan on Energy Efficiency and requested specific measures in the building sector.

(6) The residential and tertiary sector, the major part of which is buildings, accounts for more than 40 % of final energy consumption in the Community and is expanding, a trend which is bound to increase its energy consumption and hence also its carbon dioxide emissions.

(7) Directive 93/76/EEC of 13 September 1993 to limit carbon dioxide emissions by improving energy efficiency (SAVE) [2], which requires Member States to develop, implement and report on programmes in the field of energy efficiency in the building sector, is now starting to show some important benefits. However, a complementary legal instrument is needed to lay down more concrete actions with a view to achieving the great unrealised potential for energy savings and reducing the large differences between Member States' results in this sector.

(8) Directive 89/106/EEC [3] on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products requires that the construction works and its heating, cooling and ventilation installations must be designed and built in such a way that the amount of energy required in use shall be low, having regard to the climatic conditions of the location and the occupants.

(9) The energy performance of buildings should be calculated on the basis of a methodology that integrates, in addition to thermal insulation also other factors that play an increasingly important role such as heating/air-conditioning installations, application of renewable energy sources and design of the building. A common approach to this process, carried out by qualified personnel, will contribute to a level playing field as regards efforts made in Member States to energy saving in the buildings sector and would introduce transparency for prospective owners or users with regard to the energy performance in the Community property market.

(10) Buildings will have an impact on long-term energy consumption and new buildings should therefore meet minimum energy performance standards tailored to the local climate. As the application of alternative energy supply systems is generally not explored to its full potential, a systematic assessment of the feasibility of such systems for new buildings above a certain size is appropriate.

[1] Council Conclusion 8835/2000 (30 May 2000) and Council Conclusion 14000/2000 (5 December 2000).

[2] OJ L 237, 22.9.1993, p. 28.

[3] OJ L 40, 11.2.1989, p. 12.

(11) Major renovations of existing buildings above a certain size should be regarded as an opportunity to take cost effective measures to enhance energy performance.

(12) By providing objective information on the energy performance of buildings when they are constructed, sold or rented out, energy certification will help to improve transparency of the property market and thus encourage investment in energy savings. It should also facilitate the use of incentive systems. Public authority buildings and buildings frequently visited by the public should set an example by taking environmental and energy considerations into account and therefore, should be subject to energy certification on a regular basis. The dissemination to the public of this information on energy performance should be enhanced by clearly displaying these energy certificates. Moreover, the displaying of officially recommended indoor temperatures, together with the actual measured temperature, should discourage the misuse of heating, air-conditioning and ventilation systems. This will contribute to avoiding unnecessary use of energy and to safeguarding comfortable indoor climatic conditions (thermal comfort) in relation to the outside temperature.

(13) Regular maintenance of boilers and of central air conditioning systems by qualified personnel contributes to maintaining their correct adjustment in accordance with the product specification and in that way will ensure optimal performance from an environmental, safety and energy point of view. An independent assessment of the total heating installation is appropriate whenever replacement could be considered on the basis of cost effectiveness.

(14) In accordance with the principles of subsidiarity and proportionality as set out in Article 5 of the Treaty, general principles providing for a system of energy performance standards and its objectives should be established at Community level, but the detailed implementation should be left to Member States, thus allowing each Member State to choose the regime which corresponds best to its particular situation. This Directive confines itself to the minimum required in order to achieve those objectives and does not go beyond what is necessary for that purpose.

(15) Provision should be made for the possibility of rapidly adapting the methodology of calculation in the field of energy performance of buildings to technical progress and to future developments in standardisation.

(16) Since the measures necessary for the implementation of this Directive are measures of general scope within the meaning of Article 2 of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission [1], they should be adopted by use of the regulatory procedure provided for in Article 5 of that Decision,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

A common framework is hereby created to promote the improvement of the energy performance of buildings within the Community, taking into account climatic and local conditions.

This Directive lays down requirements as regards:

(a) the general framework of a common methodology for calculating the integrated energy performance of buildings,

(b) the application of minimum standards on the energy performance of new buildings,

(c) the application of minimum standards on the energy performance of large existing buildings that are subject to major renovation,

(d) energy certification of buildings, and for public buildings, prominent display of this certification and other relevant information, and

(e) regular inspection of boilers and of central air-conditioning systems in buildings and in addition an assessment of the heating installation in which the boilers are older than 15 years.

Article 2

For the purpose of this Directive, the following definitions shall apply:

1. *building:* a building as a whole or, in the residential sector, parts of the building which have been designed to be used separately such as apartments or semi-detached houses;

2. *energy performance of a building:* the total energy efficiency of a building, reflected in one or more numeric indicators which have been calculated, taking into account insulation, installation characteristics, design and positioning, own energy generation and other factors that influence the net energy demand;

3. *minimum energy performance standard of a building:* a regulated minimum requirement as regards the energy performance of buildings;

4. *energy performance certificate of a building:* an officially recognised certificate in which the result of the calculation of the energy performance of a building according to the methodology set out in the Annex has been laid down;

5. *public buildings:* buildings occupied by public authorities or frequently visited and used by the general public, such as: schools, hospitals, public transport buildings, indoor sports centres, indoor swimming pools and retail trade services buildings larger than 1 000 m^2;

[1] OJ L 184, 17.7.1999, p. 23.

6. *CHP (combined heat and power):* the simultaneous conversion of primary fuels into mechanical or electrical energy and heat;

7. *air conditioning system:* installation designed to cool and condition the ambient air;

8. *boiler:* the combined boiler body and burner-unit designed to transmit to water the heat released from burning;

9. *effective rated output (expressed in kW):* the maximum calorific output laid down and guaranteed by the manufacturer as being deliverable during continuous operation while complying with the useful efficiency indicated by the manufacturer;

10. *useful efficiency (expressed in %):* the ratio between the heat output transmitted to the boiler water and the product of the net calorific value at constant fuel pressure and the consumption expressed as a quantity of fuel per unit time;

11. *heat pump:* installation that extracts heat from the surrounding environment and supplies it to the controlled environment.

Article 3

Member States shall adopt a methodology of calculation of the energy performance of buildings of which the general framework is set out in the Annex. This methodology shall be further developed and defined in accordance with the procedure referred to in Article 11(2).

The energy performance of a building shall be expressed in a transparent and simple manner and may include a CO_2 emission indicator.

Article 4

Member States shall take the necessary measures to ensure that new buildings which are intended to be regularly used meet minimum energy performance standards, calculated according to the methodology framework set out in the Annex. These standards should include general indoor climate requirements in order to avoid possible negative effects such as inadequate ventilation. These energy performance standards shall be updated at least every five years in order to reflect technical progress in the building sector. Member States may exclude historic buildings, temporary buildings, industrial sites, workshops and residential buildings which are not used as normal residences.

For new buildings with a total surface area over 1 000 m^2, Member States shall ensure that the technical, environmental and economic feasibility of installing decentralised energy supply systems based on renewable energy, CHP, district heating or, under certain conditions, heat pumps, is assessed before the building permit is granted. The result of such an assessment shall be available to all stakeholders for consultation.

Article 5

Member States shall take the necessary measures to ensure that the energy performance of existing buildings with a total surface area over 1 000 m^2 which are being renovated, are upgraded in order to meet minimum energy performance standards in so far as these are technically feasible and involve additional costs that can on the basis of the current average mortgage rate be recovered within a period of 8 years by the accrued energy savings.

This principle shall apply in all those cases where the total cost of the renovation is higher than 25 % of the existing insured value of the building.

Article 6

1. Member States shall ensure that, when buildings are constructed, sold or rented out, an energy performance certificate, being not older than 5 years, is made ilable to the prospective buyer or tenant.

Member States may exclude historic buildings, temporary buildings, industrial sites, workshops and residential buildings which are not used as normal residences.

2. The energy performance certificate for buildings shall provide relevant information for prospective users. It shall include reference values such as current legal standards and best practice in order to make it possible for consumers to compare and assess the energy performance of the building. The certificate shall be accompanied by recommendations for the improvement of the energy performance.

3. Member States shall require for public buildings an energy performance certificate, which is not older than 5 years, to be placed in a prominent place clearly visible to the general public.

In addition, for public buildings the following information shall be clearly displayed:

(a) the range of indoor temperatures and, when appropriate, other relevant climatic factors such as relative humidity, that are recommended by the authorities for that specific type of building.

(b) the current indoor temperature and other relevant climatic factors indicated by means of a reliable device or devices.

Article 7

Member States shall lay down the necessary measures to establish a regular inspection of boilers of an effective output of more than 10 kW of which the requirements are set out in the Annex. These requirements shall be further developed and defined in accordance with the procedure referred to in Article 11(2).

Article 8

Member States shall lay down the necessary measures to establish a regular inspection of central air conditioning systems of an effective output of more than 12 kW of which the requirements are set out in the Annex. These requirements shall be further developed and defined in accordance with the procedure referred to in Article 11(2).

Article 9

Member States shall ensure that the certification of buildings and inspection of heating and air-conditioning systems are carried out by qualified and independent personnel.

Article 10

Any amendments necessary in order to adapt the Annex to technical progress shall be adopted in accordance with the procedure referred to in Article 11(2).

Article 11

1. The Commission shall be assisted by the committee established by Article 10 of Council Directive 92/75/EEC [1], hereinafter referred to as the 'committee', composed of representatives of the Member States and chaired by the representative of the Commission.

2. Where reference is made to this paragraph, the regulatory procedure laid down in Article 5 of Decision 1999/468/EC shall apply, in compliance with Article 7 and Article 8 thereof.

3. The period provided for in Article 5(6) of Decision 1999/468/EC shall be three months.

Article 12

1. Member States shall bring into force the laws, regulations and administrative provisions to comply with this Directive by 31 December 2003 at the latest.

When Member States adopt those provisions, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

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

Article 13

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

Article 14

This Directive is addressed to the Member States.

[1] OJ L 297, 13.10.1992, p. 16.

ANNEX

A. **Framework for the calculation of energy performances of buildings (Article 3)**

1. The methodology of calculation of energy performances of buildings shall integrate the following aspects:

   a) thermal insulation (of building shell and installations)

   b) heating installation and hot water supply

   c) air-conditioning installation

   d) ventilation system

   e) lighting installation

   f) position and orientation of houses and apartments

2. The positive influence of the following aspects shall in this calculation be taken into account:

   a) solar systems and other heating and electricity systems based on renewable energy sources

   b) electricity produced by CHP and/or district heating systems

3. Buildings should for the purpose of this calculation at least be classified into the following categories:

   a) single family houses of different types

   b) apartment blocks

   c) offices

   d) education buildings

   e) hospitals

   f) hotels and restaurants

   g) wholesale and retail trade services buildings

   h) other types of energy consuming buildings

B. **Requirements for the inspection of boilers (Article 7)**

The inspection of boilers shall have regard to energy consumption and limiting carbon dioxide emissions.

Boilers of an effective output of more than 100 kW shall be inspected at least every 2 years.

For heating installations with boilers of an effective rated output of more than 10 kW which are older than 15 years, Member States shall lay down the necessary measures to establish a one-off inspection of the whole heating installation. On the basis of this inspection, which shall include an assessment of the boiler efficiency at full and part load and the boiler sizing compared to the heating requirements of the building, the competent authorities shall provide advice to the users on the replacement of the boilers and on alternative solutions.

C. **Requirements for the inspection of central air conditioning systems (Article 8)**

The inspection of central air conditioning systems shall have regard to energy consumption and limiting carbon dioxide emissions.

On the basis of this inspection, which shall include an assessment of the air-conditioning efficiency at full and part load and the sizing compared to the cooling requirements of the building, the competent authorities shall provide advice to the users on possible improvement or replacement of the air-conditioning system and on alternative solutions.