COMMISSION OF THE EUROPEAN COMMUNITIES

COM(92) 182 final
Brussels, 26 June 1992

Proposal for a

COUNCIL DIRECTIVE

to limit carbon dioxide emissions by improving energy efficiency
(SAVE programme)

(presented by the Commission)

EXPLANATORY MEMORANDUM

I. INTRODUCTION

In its Communication to the Council of 14 October 1991[1] the Commission stated that for the period 1990-2000, CO_2 emissions are likely to grow by 11%.

This figure excludes, however, the new German Länder, which have been part of the Community since 3 October 1990. Inclusion of the new Länder has a significant impact on the CO_2 emission forecast for the Community. Due to the restructuring of the former centrally planned economy in the ex-GDR, which was highly energy inefficient and extremely carbon intensive, CO_2 emissions in the new Länder, in spite of strong economic growth in the late 1990s, are going to decrease substantially by more than 20 million tonnes of CO_2 or 10% in this decade. As a consequence, total Community CO_2 emissions could be expected to grow at a somewhat slower pace.

On the other hand, with low energy prices for most of the early 1990s and the rather slow introduction of energy efficiency measures, the considerable energy efficiency improvements on which the emission forecast of 11% for the Community without the new Länder was based have not yet materialized.

On the contrary, according to the initial estimates, energy consumption and CO_2 emissions grew rapidly in 1991. Present indications for the old Community are that the growth of both could have been as high as 4%. However, a large part of this growth is due to the influence of the weather, which was very warm in 1990 and nearly normal in 1991 (only slightly warmer than the average over many years).

For the period 1990-2000, the CO_2 emission growth for the old Community is now estimated at 13-14%, which corresponds to growth of about 12% for the Community including the new Länder.

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(1) Communication from the Commission to the Council entitled "A Community strategy to limit carbon dioxide emissions and to improve energy efficiency" SEC (91) 1744 final.

Moreover, the above estimate is based on an average annual economic growth rate of 2.4% compared to 2.6% in the October 1991 Communication. Higher growth rates would lead to a proportionate increase in CO_2 emissions and require a much greater effort in order to prevent CO_2 emissions from growing between 1990 and 2000.

Without specific measures for CO_2 abatement, CO_2 emissions are therefore likely to increase between 1990 and 2000 by 12% or even more.

Consequently, there is a clear need for a Community strategy. On 13 December 1991(2) this prompted the Council to consider the measures which must be taken, particularly in order:

- to improve energy efficiency;
- to increase the share of the Community's energy consumption accounted for by renewable sources of energy;
- to reduce the specific energy consumption of vehicles.

In addition, the Council felt that steps should be taken to strengthen the SAVE, JOULE and THERMIE programmes to enable SAVE to play its full part in the efforts to attain the objective of stabilizing CO_2 emissions.

II. MEASURES TO BE TAKEN

1. Immediate action

In order to assist Member States in augmenting and coordinating their national energy efficiency programmes, on 29 October 1991 the Council of Ministers approved a five-year Community energy efficiency programme entitled SAVE and commencing in 1991. The main thrust of this programme is a comprehensive series of legislative measures supported by targeted pilot actions as well as a significant effort to improve the flow of information between Member States and between the Community and other interested parties.

(2) Doc. SN/283/91 of 13 December 1991.

It is estimated that timely and full implementation of the SAVE programme could reduce the growth of CO_2 emissions by about 3%, from at least 12% growth in CO_2 to 9%.

This reduction will be achieved primarily by applying a consistent package of seven essential measures, as described in section III, covering buildings, transport and industry.

With regard to SAVE, in a recent review the Member States reached the general conclusion that the most important element was rapid implementation of the programme adopted by the Council on 29 October 1991. Actions such as budget increases or adaptation of the programme were considered unable to provide any substantial additional contributions to the CO_2 stabilization target. No new fields of action have been proposed by the Member States.

In the light of these discussions, any new measure to strengthen the SAVE programme seems inappropriate. However, in case these previous actions result in an additional substantial charge for citizens or industry, fiscal incentives should be provided where appropriate.

2. Additional action

Other far-reaching CO_2 abatement measures have been brought to the attention of the Commission in order to maximize the impact of non-fiscal measures. These measures include:

- extensive fuel switching away from coal to natural gas, renewables and other lower carbon content fuels;
- stringent mandatory standards in the domestic and transport sectors;
- voluntary and mandatory measures in industry;
- incentives in the building sector.

These options need to be examined more closely in order to assess their realistic potential for CO_2 limitation in a Community context. Some of these proposed measures, like certain targeted reductions in energy use in specific sectors (e.g. a 10% cut in refineries), could be taken into account when it comes to the conclusion of voluntary agreements between the Commission and the sectors concerned.

III. SPECIFIC MEASURES TO BE TAKEN

1. To implement Article 130r of the Treaty, which calls for prudent and rational utilization of natural resources, and to attain the objective of the SAVE programme and of the measures adopted to implement it, there is clearly an urgent need for action in the following fields if the Community is to attain the stabilization target it has set:

   - the certification of CO_2 emissions related to energy consumption in buildings;
   - the billing of heating, air-conditioning and hot-water costs on the basis of actual consumption;
   - promoting third party financing of investments of energy efficiency in the public sector;
   - thermal insulation of new buildings;
   - regular inspection of boilers;
   - regular inspection of cars;
   - energy audits of businesses.

   This approach will allow action on every energy-related source of CO_2 emissions, except for power stations, which come under other types of measure.

   In view of the different situations and behaviour patterns within the Community, it will be left to the Member States to define the procedures best suited to their specific circumstances.

Some of these measures can be implemented rapidly without any special infrastructure or any significant spending. Conversely, others will have a substantial financial impact because they will require investment in joint energy-saving measures. The Member States will undoubtedly take into account these factors when adopting their national implementing measures.

2. Energy certification of buildings

Energy certification of buildings is a procedure for providing information about the energy characteristics of existing buildings in the residential and tertiary sectors.

This information should be produced by the owner when a property is sold and subsequently whenever it is put up for rent, when the same document will be used, unless in the meantime major changes have been made to the energy characteristics.

The Member States which encourage or require the provision of information about the energy efficiency of buildings have generally found that schemes of this kind have stimulated the efforts of economic operators to a significant extent: not only have investment decisions been speeded up, they have also been directed towards the most cost-effective work.

Naturally, the benefits of energy certification of any given building depend on its commercial, cultural or historical value, the architecture of the building and the local climate.

It is therefore up to the Member States to define the buildings for which such certification will be phased in, although it is self-evident that a detached house loses more heat than a smaller, less exposed flat and that glass buildings pose greater insulation problems than premises built of more conventional materials.

After the first five years, this scheme is expected to save over 1.5 Mtoe per year, cutting CO_2 emissions by some 3 million tonnes.

3. Billing of heating, air-conditioning and hot-water costs on the basis of actual consumption

Many buildings, or parts of buildings, in the Community are supplied by collective heating, air-conditioning or hot-water systems.

All too often the services are billed on a flat-rate basis (based on unit surface area or share of the property) which creates no incentive for prudent management of natural resources.

Introduction of a method of billing of heating, air-conditioning and hot-water costs on the basis of actual consumption would mean that consumers would pay only for what they actually consume. As a result, this would create an economic incentive to use resources more rationally and take greater care of the environment.

Together, all homes under this system can be expected to attain an average saving of 10 to 15%.

Consequently, the long-term objective of this measure is to phase out flat-rate billing of heating, air-conditioning and hot-water costs.

The resultant greater awareness on the part of consumers could save at least 1.2 Mtoe and, in the process, reduce CO_2 emissions by over 3 million tonnes.

4. Promoting of third party financing for energy efficiency investments in the public sector

Third party financing is defined as the provision of the services of auditing, installation, operations, maintenance and financing on a turnkey basis for an energy efficiency investment, with the recovery of the cost of these services being contingent, either wholly or in part, on the level of energy savings.

Energy service company (ESCO) financing or third-party financing is still relatively little used in the Community.

In general the provision of private capital for third party financed investments is accomplished by means of an ESCO borrowing the finance from private sources and using part of the resulting cost savings to pay off the loan. The energy savings are, therefore, viewed as a 'stream of income' which can support a business: the ESCO's business of investing in, and providing performance guarantees for, energy conservation. The concept of the energy service company is, therefore, central to the successful operation of the third party financing mechanism. An ESCO must provide a combination of engineering, financial and marketing skills. It must be capable of carrying out detailed energy audits, and of selecting reliable technologies suitable for making planned energy savings.

The public sector with an annual energy consumption of 45 Mtoe in 1989 represents a very significant area for potential energy savings. Although some Member States have encouraged energy saving in the public sector several factors have militated against the achievement of attainable energy savings.

Where investment in energy savings must be paid from the annual operating budget allocation, it is generally true to say that the saving investment will not be made.

Procedures associated with applications to use innovative financing mechanisms (including third party financing) are generally novel and uncertain. This tends to complicate and prolong such applications and discourages public bodies from making them.

In many cases public bodies which carry out innovative energy efficiency programmes are penalized by being forced to remit part or all of the savings achieved to a central treasury. This type of imposition leads to apathy towards energy saving by many public bodies.

Contracts already carried out in the public sector demonstrate that public sector TPF contracts tend to have higher transaction costs because of the administrative inertia which must be overcome. These high transaction costs tend to make the public sector less attractive as a market for ESCOs.

If TPF were universally applied a total energy saving of about 5 Mtoe per annum in the EC public sector would be possible.

5. Thermal insulation of new buildings

The choice of insulation standards in a new building is a decision which shapes the rest of the life of the building.

In practice, it is technically difficult to improve insulation levels in existing stock and the cost is out of proportion to installation of efficient insulation during construction.

Insulation standards for new buildings vary considerably from one Member State to another, even when differences in climate are taken into account.

There is a need to define a method of setting equivalent thermal insulation standards for newly-constructed buildings in each climatic region.

This method should lead to the definition of minimum insulation standards taking account both of local conditions and of the intended use of the building (housing, offices, hospitals).

A 0.2 toe reduction in the annual energy consumption of each new unit of housing built between now and the year 2000 would reduce energy consumption by over 2 Mtoe and cut CO_2 emissions by over 6 million tonnes per year.

6. Regular inspection of boilers and vehicles

A particular effort must be made to control products used in such large numbers that they inevitably play a prominent part in the energy balance, however low their unit consumption.

To capitalize on the safety inspections already carried out in a number of Member States, it makes sense for these inspections also to pay particular attention to factors with a direct impact on CO_2 emissions.

An additional advantage of measures of this type is that they produce rapid results.

7. Energy audits

In most businesses, the motivation to save energy takes second place to the pressures of production and the market.

Nevertheless, there is enormous potential for savings, as has been illustrated by the French scheme to conduct an energy audit of businesses every three years. However, the situation varies considerably from one Member State to another. Consequently, the important component is to ensure that the twin concerns of conserving the environment and saving energy are audited, although it makes little difference whether this is done by the staff of the company itself or by outside teams.

IV. Expected results

There is undeniably considerable potential for energy savings in the Community.

A reduction in energy consumption goes hand in hand with reduced CO_2 emissions. For this reason, the SAVE programme plays a prominent part in the strategy to stabilize CO_2 emissions.

The seven measures proposed would allow a reduction of approximately 61 million tonnes in the total CO_2 emissions of 2 800 million tonnes related to energy use. The individual reductions expected are as follows:

		MT CO_2
-	buildings[3]	17
-	audits of industry	16
-	inspection of boilers	20
-	inspection of motor vehicles	8.

The Community measures will also have to be based on the principle of subsidiarity which dictates that action must be taken at the level capable of providing the best solution to the problems faced. Since some Member States are more active than others, there is a legitimate case for action by the Community implemented on a highly decentralized basis.

In practice, without action of this type there is a danger that national initiatives taken at different times and with diverging resources could slow progress with negative impacts on the internal market and convergence of the Member States' energy and environmental protection policies.

The diversity of the energy-saving measures in this consistent Community package provides the requisite flexibility while at the same time allowing all levels concerned to work within a clearly defined framework.

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The Council is therefore requested to approve the attached proposal for a Council Directive to limit carbon dioxide emissions by improving energy efficiency.

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(3) This reduction breaks down as follows (in million tonnes of CO_2):
- certification: 3
- billing: 3
- third party financing: 5
- insulation: 6

Proposal for a

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to limit carbon dioxide emissions by improving energy efficiency (SAVE programme)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 130s thereof,

Having regard to the proposal from the Commission(1),

Having regard to the opinion of the European Parliament(2),

Having regard to the opinion of the Economic and Social Committee(3),

Whereas on 29 October 1990 the Council set an objective of stabilizing carbon dioxide (CO_2) emissions by the year 2000;

Whereas by Decision 91/565/EEC(4), the Council adopted the SAVE programme aimed at making more rational use of energy in the Community;

Whereas Article 130r of the Treaty stipulates that one objective of action by the Community relating to the environment shall be to ensure a prudent and rational utilization of natural resources; whereas these natural resources include oil products, natural gas and solid fuels which are essential sources of energy but also the leading sources of CO_2 emissions;

Whereas the residential and tertiary sectors account for nearly 40% of final energy consumption in the Community and are expanding, a trend which is bound to increase their energy consumption and, hence, also their CO_2 emissions;

(1) OJ No C
(2) OJ No C
(3) OJ No C
(4) OJ No L 307, 8.11.1991, p. 34.

Whereas, by providing objective information about the energy characteristics of buildings, energy certification will help to improve transparency of the property market and to encourage investments in energy savings;

Whereas this certification is all the more vital in buildings owned by the public authorities, given that those responsible for such buildings are frequently not the occupiers; whereas, moreover, in subsidized housing energy costs often represent a considerable proportion of the total costs;

Whereas, the billing, to occupiers of buildings, of heating, air-conditioning and hot-water costs on the basis of actual consumption will contribute towards energy saving in the residential sector;

Whereas the recommendations and resolutions adopted by the Council on the billing of heating and hot-water costs(5) have been applied in only two Member States; whereas a significant proportion of heating, air-conditioning and hot-water costs are still being billed on the basis of factors other than energy consumption;

Whereas new methods of financial support are needed to facilitate investments in energy saving in the public sector; whereas, in this connection, the Member States should facilitate and make full use of the possibilities offered up by third party financing;

Whereas new buildings will have an impact on long-term energy consumption; whereas they should therefore be fitted with efficient thermal insulation tailored to the local climate;

Whereas regular maintenance of boilers and vehicles has a significant impact on their energy consumption and emissions of pollutants; whereas regular inspection will reduce both these to the minimum;

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(5) Council Recommendation 76/493/EEC, OJ No L 140, 28.5.1976, p. 12.
Council Recommendation 77/712/EEC, OJ No L 295, 18.11.1977, p. 1.
Council Resolution of 9 June 1980, OJ No C 149, 18.6.1980, p. 3.
Council Resolution of 15 January 1985, OJ No C 20, 22.1.1985, p. 1.

Whereas industry is generally willing to make more efficient use of energy to meet its own economic objectives; whereas the energy audits already introduced in companies with high energy consumption should be generally applied to bring about significant improvements in energy efficiency in this sector,

HAS ADOPTED THIS DIRECTIVE:

Article 1

The purpose of this Directive is to secure the attainment by the Member States of the objective of limiting carbon dioxide emissions by improving energy efficiency, notably by means of the following measures:

- energy certification of buildings;
- the billing of heating, air-conditioning and hot-water costs on the basis of actual consumption;
- promoting third party financing for energy efficiency investments in the public sector;
- thermal insulation of new buildings;
- regular inspection of boilers;
- regular inspection of vehicles;
- energy audits of businesses.

Article 2

Energy certification of buildings shall consist of a description of their energy characteristics which must provide information for prospective buyers.

Within five years of the date set in Article 11 this information shall be extended to prospective tenants.

Certification shall also apply to buildings owned by the public authorities.

Member States shall take the appropriate measures in order progressively to bring into effect:

- energy certification of buildings put up for sale or rent in transactions between private citizens; amendments may be allowed for certain types and categories of building and certain climatic conditions;
- certification of public-sector buildings at a rate of at least 5% of the existing stock per year.

Article 3

Member States shall take the measures necessary to ensure the billing of heating, air-conditioning and hot-water costs on the basis of actual consumption in order that the cost of these services can be apportioned between the occupiers of all or part of a building on the basis of the specific quantities of heat, cold and hot water consumed by each occupier. This shall apply to buildings or parts of buildings supplied by a collective heating, air-conditioning or hot-water installation. These measures shall be taken save where technically impossible or where the costs exceed the savings expected.

Article 4

For the purposes of this Directive, "third-party financing" means the provision of the services of auditing, installation, operation, maintenance and financing on a turnkey basis for an energy efficiency investment, with the recovery of the cost of these services being contingent, either wholly or in part, on the level of energy savings.

Member States shall take the necessary measures to favour third-party financing for investment in the public sector, notably by removing regulatory and administrative obstacles.

Article 5

Member States shall take the appropriate measures to ensure effective thermal insulation of new buildings, taking a long-term view, on the basis of standards to be laid down taking account of the climatic conditions or regions.

Article 6

Member States shall take the necessary measures to ensure regular inspection of heating installations in order to attain:

- optimum operating conditions from the point of view of energy consumption; and

- minimum emissions of pollutants.

Article 7

Member States shall take the necessary measures to ensure regular inspection of motor vehicles in order to attain:

- optimum operating conditions from the point of view of energy consumption; and
- minimum emissions of pollutants.

Article 8

Member States shall take all the appropriate measures to ensure the performance of energy audits of industrial undertakings to optimize their energy efficiency and limit emissions of pollutants.

To this end, Member States shall determine the categories of industrial establishments for which such energy audits are to be gradually introduced, on the basis of their contribution to carbon dioxide emissions, wherever these are high.

Article 9

Member States shall report to the Commission every two years on the results of the measures taken to implement this Directive.

Article 10

The Council, acting by a qualified majority on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, shall, where necessary, adopt any additional provisions to the rules laid down in this Directive.

Article 11

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than [ ].

   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 governed by this Directive.

Article 12

This Directive is addressed to the Member States.

Done at Brussels,

For the Council
The President

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DOCUMENTS

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