

ECONOMIC AND SOCIAL  
CONSULTATIVE ASSEMBLY

1993



# CO<sub>2</sub> and other greenhouse gas emissions

EUROPEAN  
COMMUNITIES



ECONOMIC AND  
SOCIAL COMMITTEE

Brussels 1993

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## PREFACE

The problem of global warming caused by greenhouse gases, over 60% of which is accounted for by CO<sub>2</sub> emissions from fossil fuels, concerns the entire planet and necessitates urgent remedial action. As part of its contribution to that action the European Community is working on four major initiatives on each of which the ESC has given its Opinion. These Opinions are published together in this brochure.

Three of the Opinions cover non-fiscal measures to reduce CO<sub>2</sub> emissions:

- one (SAVE) is on energy efficiency covering inter alia CO<sub>2</sub> emissions from energy used in buildings and motor vehicles;
- another (ALTENER) deals with actions for greater use of renewable energy resources which are less polluting in terms of CO<sub>2</sub>;
- a third covers the monitoring of CO<sub>2</sub> and other greenhouse gas emissions with emphasis on achieving stabilization targets by the year 2000.

The Committee's Opinions contain detailed analyses of the problems involved and make suggestions for modifications and improvements.

The remaining proposal is more controversial. It deals with fiscal measures to reduce emissions by the imposition of taxes (i) on one greenhouse gas - CO<sub>2</sub>; (ii) on energy, thus reducing pollution through the operation of market forces.

While agreeing with these objectives in general terms the Committee proposes significant modifications - specifically a general greenhouse gas tax, as distinct from a tax on CO<sub>2</sub> only, but at a lower level than that proposed by the Commission, and a levy on energy which would be ploughed back into energy saving projects, rather than a tax which could be used to cover general budget shortfalls.

Representing, as it does, the interests of industry, trade unions and "others" including environmentalists, the Committee's Opinions add up to a reasonable consensus, with a minority dissenting viewpoint on the fiscal measures (also attached), on how the Community should deal with the problem of greenhouse gas emissions.

**OPINION**

of the  
Economic and Social Committee  
on the

**Proposal for a Council Decision for a monitoring mechanism of  
Community CO<sub>2</sub> and other greenhouse-gas emissions  
(COM(92) 181 final)**



On 22 June 1992 the Council decided to consult the Economic and Social Committee, under Article 130s of the Treaty establishing the European Economic Community, on the

*Proposal for a Council Decision for a monitoring mechanism of Community CO<sub>2</sub> and other greenhouse gas emissions*  
(COM(92) 181 final).

The Section for Protection of the Environment, Public Health and Consumer Affairs, which was responsible for preparing the Committee's work on the subject, adopted its Opinion on 5 January 1993. The Rapporteur was Mr SILVA.

At its 302nd Plenary Session (meeting of 28 January 1993), the Economic and Social Committee adopted the following Opinion with no votes against and 4 abstentions.

## 1. Background to the proposal

1.1. In order to assess properly all the implications of the present proposal, it should be considered:

- in relation to previous EC activity in this area, and in particular the undertaking made by the Energy/Environment Council of 29 October 1990 to stabilize CO<sub>2</sub> emissions at their 1990 levels by the year 2000;
- in the light of present emissions and likely trends in the next few years;
- in close connection with (a) the on-going international debate on this subject, (b) the establishment and harmonization of monitoring and measuring methods at national, EC and international level, and (c) the willingness and commitment of the Member States and other interested parties, including the socio-economic groups who are directly involved;
- in relation - with due account for its more specific nature - to the Commission's proposed strategy for limiting emissions and improving energy efficiency comprising the SAVE and ALTENER programmes and the possible adoption of fiscal measures.<sup>1</sup>

1.2. The Committee has always welcomed the major work and research accomplished in this field, the positive experiences gleaned, the significant data and analyses that have been compiled, and the efforts to overcome difficulties and differences of opinion and to agree on common measures. The serious delays are due both to the complexity of the problem and to the continuing disagreements between Member States and different sectors on the measures to be taken jointly or individually, taking account of the differing development and pollution levels and the need to share the costs and benefits fairly. The Committee therefore welcomes the present proposal as a major contribution to overcome these problems by means of effective, coordinated and integrated measures.

## 2. Topicality and gist of the proposal

2.1. The gestation period of the proposal has coincided with :

- 1) the intensification of the debate on the greenhouse effect, but also an approximation of positions at EC and international level as regards the steps to be taken and the costs to be borne by different countries;
- 2) the formulation of a number of procedures, timetables and deadlines in the proposal, which will make it easier for the Member States to accept and implement it;
- 3) the debates before, during and after the Rio Summit, which have helped to clarify international public perceptions of this problem.

2.2. The Community envisages a package of measures, including the monitoring mechanism, to stabilize EC emissions of CO<sub>2</sub> and other greenhouse gases by the year 2000 at their 1990 levels. This is seen as a minimum, feasible target and is in line with the Convention on climate change signed at the Rio Summit and recently ratified by the United States.

2.3. The Commission is drawing partly on the findings of experiments done over a number of years (such as the Corine data monitoring programme), EUROSTAT statistics, and OECD and IPCC (Intergovernmental Panel on Climate Change) work on the harmonization of monitoring methods. The monitoring mechanism is to be based on five key elements:

- 1) national programmes, to be drawn up by the Member States;
- 2) evaluation of these programmes by the Commission in the light of the EC stabilization agreement;
- 3) follow-up to the national programmes by means of a data reporting system;
- 4) establishment of an inventory of greenhouse-gas emissions;
- 5) setting-up of a consultative committee of Member State representatives.

## 3. CO<sub>2</sub> and other greenhouse-gas emissions in Europe and the world: data and assessments

### 3.1. Greenhouse effect and effect on the climate

3.1.1. World carbon-dioxide levels have increased by 20% over the last ten years, and other greenhouse gases (methane, nitrogen dioxides, CFC) are also on the increase. This influences the earth's temperature. According to the IPCC, this temperature has risen over the last hundred years by between 0.3° and 0.6°. A doubling of carbon dioxide levels over the next few decades could trigger a further increase of 1.5° to 4.5°, and this would have very serious consequences.

<sup>1</sup> SEC(91) 1744 final, COM(92) 246 final, COM(92) 180, 182 and 226 final



### 3.2. CO<sub>2</sub> emissions by country and groups of countries

3.2.1. In 1989, CO<sub>2</sub> emissions accounted for 61% of greenhouse-gas emissions. The EC was responsible for 13%, the USA for 23%, Eastern Europe for 25%, and Japan for 5%.<sup>2</sup> Recent forecasts suggest that if nothing is done, CO<sub>2</sub> emissions are likely to increase by 13.5% over the period 1990 to 2000.<sup>3</sup> Over the period 1986 to 1990 EC emissions rose by 4%, after having remained stable over the period 1970 to 1985:<sup>4</sup> these variations are largely a reflection of oil price trends.

### 3.3. Relation between population, resources and CO<sub>2</sub> emissions

3.3.1. 20% of the world's population consumes 80% of resources and produces 80% of pollution. The most highly industrialized countries are the main source of greenhouse-gas emissions: the United States, with 5% of the world population, uses 25% of all energy and releases 23% of all carbon dioxide emissions. India, with 16% of the world's population, owns only 1% of world resources, uses 3% of all energy and emits 3% of all carbon dioxide. However, one must bear in mind that the developing countries are going to increase their emissions rapidly as their energy consumption rises. Within 30 or 40 years, the use of carbon fuels as an energy source to support economic growth in China could on its own double man-made emissions of carbon dioxide, even though per capita gas emissions in China will remain significantly below those of such countries as Italy and France.

## 4. General comments

4.1. Subject to the comments which follow, the Committee endorses both the proposal itself and the considerations on which it is based.

### 4.2. Community action

4.2.1. The Commission Communication states that the decision to limit emissions is prompted by the fact that the "removal of CO<sub>2</sub> from emissions at present is not only uneconomic but at the technical level such methods are far from being sufficiently developed."<sup>5</sup> Hence the only practical solution in the short and medium term is to limit the growing use of fossil fuels, improve energy efficiency, and promote renewable energy sources.

4.2.2. Nevertheless, the Committee suggests that the Community give firmer support to EC research and development and to non-polluting technologies and processes for the use of fossil fuel energy, insofar as this will continue to play a role in the future.

4.2.3. While the Committee can support this pragmatic and realistic approach, it should be backed by a commitment to make up for lost time by adopting and implementing the proposed monitoring mechanism very soon. Appropriate financial instruments will also be needed to help those

Member States which will find it difficult to act in the short time allowed them.

4.2.4. The Committee's November 1989 Opinion on the European Environment Agency<sup>6</sup> expressed serious concern at the delays and opposition to the establishment of the Agency and the failure to agree on where it should be based. This concern has been reiterated in subsequent Opinions. It is clear that the Environment Agency would provide the best framework for the proposed monitoring mechanism. The present Commission proposal is important partly because it seeks to reduce these delays and difficulties by bringing in a Community mechanism to monitor and act on CO<sub>2</sub> and other greenhouse-gas emissions at both EC and national level.

4.2.5. The Committee considers that the proposed Decision should be based on Articles 130r and 130s of the EEC Treaty. Under these Articles, the Community must take account of the potential benefits and costs of action or of lack of action, and apply the "polluter pays" principle. This means internalizing the external costs of environmental damage.<sup>7</sup>

4.2.6. The principle is particularly important with reference to damage caused by energy use; this justifies the promotion of preventive measures such as improvements in energy efficiency.

4.2.7. In supporting the mechanism and the Community strategy, the Committee also endorses the common objective of stabilizing emissions. Three types of action are envisaged, based on the principle that burdens should be shared fairly:

- 1) stepping-up of non-fiscal measures (SAVE and AL-TENER programmes);
- 2) economic and fiscal instruments, with a possible tax to encourage energy saving and a reduction in emissions, but without causing an increase in the overall tax burden;
- 3) national implementing and additional measures.

### 4.3. Community action and international cooperation

4.3.1. The Committee stresses the need for a global solution. CO<sub>2</sub> emissions affect the whole planet and therefore call for a global solution which should involve all developed and developing countries. Although the developed world has hitherto been the main CO<sub>2</sub> producer and polluter, all the signs are that the developing nations' CO<sub>2</sub> emissions are set to increase rapidly in the next few years. To take account

<sup>2</sup> Source: SEC(91) 1744 final

<sup>3</sup> Energy in Europe: A view to the future (September 1992, EC Commission DG XVII)

<sup>4</sup> EUROSTAT Environment Statistics 1989

<sup>5</sup> SEC(91) 1744 final, page 1

<sup>6</sup> OJ C 56 of 7 March 1990

<sup>7</sup> ESC Opinion on the Environment and the internal market, OJ C 332 of 31 December 1990

of the various measures adopted and the difficulties encountered in different areas, EC strategy should therefore encourage all countries (from the most industrialized to those of Eastern Europe and the developing world) to speed up the definition and implementation of measures sharing the same aims.

#### 4.4. *Cooperation with developing countries and Eastern Europe*

4.4.1 The Committee considers that a special effort should be made to involve the developing countries in such action, by framing appropriate agreements and measures as soon as possible, including the transfer of technology and financial resources.

4.4.2. East European countries produce a significant proportion of greenhouse-gas emissions. The Committee considers that experience-swapping and cooperation<sup>8</sup> should be undertaken with these countries as a matter of urgency, so as to avoid the problems that have beset other countries with heavy concentrations of industry and energy. The main aim should be to encourage moves towards energy efficiency and environmental and technological rehabilitation, taking account of the complicated and difficult economic restructuring facing these countries.

### 5. **Specific comments and recommendations**

5.1. The Committee would make the following points on the structure of the new mechanism and the proposed procedures.

#### 5.2. *Article 1 - Monitoring mechanism*

5.2.1. The Committee endorses the proposal and the highly realistic objective, but feels that concern to take account of differing interests and situations may have led to the establishment of an excessively distant deadline. The main work on achieving stabilization at 1990 levels by the year 2000, will only begin in 1994 (the date laid down for the drawing-up of national programmes and the setting of national targets for 1996, 1998 and 2000). If there are further delays, disagreements or failures to comply, the operation could fail to achieve the desired results. To avoid such difficulties and fragmentation of efforts, it might be necessary to buttress the longer term programmes with shorter national and EC plans laying down mid-term objectives which should be fixed and monitored jointly.

#### 5.3. *Article 2 - Definitions*

5.3.1. The Committee agrees with the definitions, which, however, only concern the following terms : CO<sub>2</sub> emission, Community CO<sub>2</sub> stabilization target, national CO<sub>2</sub> emissions objectives, national programme, and other greenhouse-gas emissions. The definitions are very brief and partial, and only explain the general meaning of the terms. Either here, in another Article or in the introduction, it would be useful to have a more concrete explanation of

the content of the measures. Definitions of "mid-term work plans" or "mid-term deadlines" could also be inserted in line with the comments made on Article 1.

#### 5.4. *Article 3 - National and additional CO<sub>2</sub> emission programmes*

5.4.1. This Article only gives a general explanation of the possible content of the national programmes. Further details of their content would be helpful with a view to drawing up the Community programme. Although details are available in other documents, they would be most useful for all concerned and would in no way undermine Member States' freedom to prepare and adapt the programmes to their particular circumstances. As regards the additional national programmes, it is not clear whether the reports refer solely to past activity (e.g. in 1990) or to full-scale programmes with commitments and measures to be undertaken in order to stabilize emissions at 1990 levels by the year 2000. Yet again, they might be specific supplementary programmes to take account of different local and sectoral situations. The Committee feels that a more precise definition of the content and objectives of the two types of national programmes would help to make them easier to understand and add to their effectiveness.

5.4.2. In some countries environment policy is the responsibility of the regional authorities. If the monitoring system is to operate smoothly, effective cooperation must be secured from all the relevant authorities, especially in the regions. The Committee is concerned about this, and urges that the necessary provisions be adopted.

#### 5.5. *Article 4 - First evaluation of national programmes*

5.5.1. This gives a clear picture of the procedure for assessing national programmes, their dovetailing with Community action and any additional measures. It would be useful to clarify whether these additional measures are to be national, EC or both. In any case the use of both types of additional measures will be extremely helpful for attaining the stabilization target, with due regard for burden sharing. For the additional national measures, preference should be given to use of the committee procedure laid down in Article 8.

#### 5.6. *Article 5 - Inventory and data reporting*

5.6.1. The Committee is pleased that the EC and Member States are to prepare the inventory of emissions jointly, and that account is to be taken of progress made on international methods for emissions accounting. It also endorses the other parts of this Article.

<sup>8</sup> Under the PHARE programme and European energy charter

**5.7. Article 6 - Implementation of national programmes**

5.7.1. The Committee endorses the sending of a triennial report from the Commission to the Council and Parliament surveying progress and problems in the Member States and in the Community as a whole. However, it urges that the Committee also be sent the report just as it has been sent the present proposal.

**5.8. Article 7 - CO<sub>2</sub> emission monitoring and national energy policies review**

5.8.1. This is an important Article, designed to integrate the data reporting "as closely as possible" to the review process of national energy policies.

**5.9. Article 8 - Consultative committee**

5.9.1. As a consultative body, this committee will play a significant part in forging contacts and the exchange of information, thus helping to avoid delays and disagreements, and facilitating cooperation, data reporting, and the implementation of the measures.

**Rejected amendment**

The following amendment was rejected but received more than 25% of the votes cast:

**Paragraph 3.2.1.**

Replace all the words after the colon in the penultimate and last lines by the following:

*"although these variations may appear to reflect oil price trends, a more significant factor for the stability over the earlier period was the shift of consumption from oil and coal to natural gas and nuclear energy while total energy consumption was increasing."*

**Reasons**

Self evident.

**Voting**

For:	18
Against:	40
Abstentions:	5

**OPINION**  
of the  
Economic and Social Committee  
on the  
**Proposal for a Council  
Directive to Limit Carbon Dioxide Emissions by Improving Energy Efficiency  
(Proposal presented under the SAVE programme)  
(COM(92) 182 final)**



On 16 July 1992 the Council decided to consult the Economic and Social Committee, under Articles 130s and 198 of the Treaty establishing the European Economic Community, on the:

*Proposal for a Council Directive to limit carbon dioxide emissions by improving energy efficiency* (Proposal presented under the SAVE programme) (COM(92) 182 final).

The Section for Energy, Nuclear Questions and Research, which was responsible for preparing the Committee's work on the subject, adopted its Opinion on 30 October 1992. The Rapporteur was Mr FLUM.

At its 301st Plenary Session (meeting of 25 November 1992) the Economic and Social Committee adopted the following Opinion unanimously:

### 1. Preliminary remark

1.1. On 26 June 1992 the Commission submitted a Proposal for a Council Directive to limit carbon dioxide emissions by improving energy efficiency (presented under the SAVE programme)<sup>1</sup>. A programme to improve energy efficiency is needed to counter the wasteful use of natural energy resources, particularly in the industrialized countries (input side of the economy), and to mitigate the direct and indirect damage to the environment which flows therefrom (output side of the economy). The Commission's Draft Directive is therefore in principle most welcome and is a step in the right direction.

### 2. Remarks on the content of the Directive

2.1. Since prices on world energy markets are influenced by a large number of factors and so do not reflect any potential scarcity of energy resources, the market mechanism fails to perform its function since it is unable, via the price regulator, to provide short or medium-term incentives to use energy in a less profligate manner. Hence the need for a package of measures to improve energy efficiency and reduce CO<sub>2</sub> emissions and thereby make a substantial contribution to easing the pressure on the environment.

2.2. This is where the present Commission proposal comes into play as part of the SAVE programme. Launched in 1991, this programme is intended to run for 5 years and to assist Member States in further developing and coordinating their national programmes to promote the more efficient use of energy. The SAVE programme<sup>2</sup> itself is an integral part of other Community energy-saving measures.

### 3. Essential measures to be taken under the Directive

3.1. To achieve the Community's CO<sub>2</sub> stabilization target, a package of seven measures has been proposed, in keeping with Article 130r of the EEC Treaty, as part of the policy to improve energy efficiency:

— the energy certification of buildings;

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

3.2. The programme excludes power stations which are covered under separate EC research and demonstration projects.

### 4. Comments on the Explanatory Memorandum of the draft Directive

4.1. In connection with the Introduction to the Explanatory Memorandum, we would add that between 1987 (the reference year for national energy-policy thinking) and 1991 energy-related CO<sub>2</sub> emissions in Germany fell by about 9% even though CO<sub>2</sub> emissions stemming from the use of oil and gas rose slightly during the same period. The Draft Directive raises the question of switching from one fossil fuel to another but fails to address the problems of security of supply, the expected lifespan of the various fossil fuels and the possibility of the CO<sub>2</sub> problem being replaced by a methane problem. It should also be pointed out that over the next few years at least, rationalization measures will result in a significant reduction in CO<sub>2</sub> emissions from coal-burning\*.

4.2. The Commission's statement that, according to estimates, the full implementation of the SAVE programme within the deadlines set might well reduce the growth in CO<sub>2</sub> emissions by about 3 percentage points, i.e. from 12% to 9%, requires some clarification.

4.3. It is also interesting to pinpoint what Community savings of 3% represent on a world scale. According to the figures given in the final report of the Committee of Enquiry on Precautionary Measures to Protect the Earth's Atmosphere, CO<sub>2</sub> emissions in the Community, including the former GDR, totalled 3,187 million tonnes in 1986. This figure represents 15.9% of the world's energy-related CO<sub>2</sub> emissions of 20,055 million tonnes. EC savings of 3% thus amount to 95.61 million tonnes which seems substantial but is in fact equivalent to no more than 0.48% of worldwide emissions.

<sup>1</sup> OJ N° C 179 of 16 July 1992, page 8

<sup>2</sup> OJ No. L 307 of 8 November 1992

\* First report of the Committee of Enquiry on Protection of the Earth's Atmosphere, Bundestag, Doc. 12-2400 of 31 March 1992

4.4. The IPCC (Intergovernmental Panel on Climate Change) has reached the conclusion that a stabilization of "Greenhouse" gas concentrations at 1990 levels requires worldwide reductions of at least 60% in the case of carbon dioxide, 75-100% in the case of fully halogenated CFCs, 15-20% in the case of methane and 70-80% in the case of dinitrogen monoxide. Against this background, 0.48% is insignificant. The figure would therefore seem to be grossly out of proportion to the associated macro-economic and employment policy costs which are completely ignored in the draft Directive. The draft Directive is however part and parcel of an overall plan to reduce CO<sub>2</sub> emissions so individual figures should also be seen against this general background.

4.5. In the context of implementation of the measures it is quite right to mention the principle of subsidiarity which governs relations between the EC and the Member States. Care must therefore be taken to ensure that this principle is enforced to the letter when a Community initiative is launched.

## 5. General comments

5.1. The proposal to limit carbon dioxide emissions by improving energy efficiency is by and large welcome and deserves to be approved. It is very useful in terms of its specific contribution to energy and environmental policies. First and foremost, however, it constitutes a further plank of the Community's energy-saving strategy. It falls within a comprehensive range of EC energy measures designed to bring about energy savings, protect the environment and safeguard the natural world.

5.2. The presentation of problems and of some aspects of the Directive is still incomplete and requires some fleshing out. In the various proposals and suggestions which it makes in this Opinion the Committee will be endeavouring to ensure that the Directive is transposed more effectively into national law.

5.3. The Draft Directive is based on a package of seven key measures which Member States will be expected to accommodate in their energy-saving policies and implement at national level. A welcome feature of the Draft Directive is that whilst the content of the measures has been fixed in advance, Member States are at liberty to decide how the measures will be implemented.

5.4. Much important action has already been taken at both EC-level and by the individual Member States in respect of the measures proposed in the Draft Directive. A number of Member States have already introduced strict legislation on thermal insulation, the inspection of boilers and the regular inspection of motor vehicles in the interests of achieving optimum energy consumption and the reduction of pollutant emissions.

5.5. State-of-the-art technology is an important factor when it comes to implementing the proposed measures.

There is a need to ensure ongoing technological progress. It is also essential that the inspection equipment and testing methods used in the Member States be comparable.

5.6. The Committee would have been pleased if the experiences of, and conclusions drawn from, the research and demonstration projects for power stations had been reported in the Directive, together with any beneficial effects on the environment.

5.7. In the interests of efficiency, the exchange of information between Member States is very important; such an exchange is already provided for in the SAVE programme.

5.8. Internal resources are an essential part of the energy-supply market. The fact that the EC is working to establish an internal energy market will not lessen its dependence on imports from third countries. The introduction of new technology makes it possible, for example, to use fuels such as coal without damaging the environment. For example, 90% of the lignite and coal-fired power stations in the Federal Republic of Germany use approved technology. The remaining 10% are to be decommissioned by the end of 1993.

5.9. Efforts must be made to ensure that the proposed package of measures does not have an adverse effect on the competitiveness of enterprises, which means that the different sections of the proposed programme have to be implemented at the same level in all Member States.

5.10. Member States have to provide the Commission with two types of information:

- they are required to send the Commission the verbatim version of national legislation adopted in furtherance of the Directive;
- they are required to send the Commission a two-yearly progress report on the measures taken to implement this particular Directive.

## 6. Specific comments on individual Articles

### 6.1. Article 2 (*Energy certification of buildings*)

6.1.1. The Commission's energy certification proposal is by and large welcomed.

6.1.2. The proposed derogations (rendered as "amendments" in the first indent of Article 2 of the English version) must be defined in detail to obviate deliberate misinterpretation.

6.1.3. The gradual introduction of energy certification for buildings owned by the public authorities (at a rate of at least 5% of the existing stock per year) is unacceptable. The public authorities should be the first to show a good example. The proposed special treatment for public-sector buildings (as opposed to private dwellings and business premises) is also unwarranted.

## 6.2. Article 3

6.2.1. Owners and tenants will have a different approach to energy-saving investment. This will generally cause problems.

6.2.2. A framework for removing such obstacles must therefore be created. This would include favourable loan repayment conditions for owners as well as hardship allowances for socially underprivileged tenants unable to shoulder the burden of investment costs being incorporated into their rent.

6.2.3. In determining energy costs, account should also be taken of the condition of each particular dwelling.

6.2.4. The Committee presumes that the Member States make allowances for the specific circumstances obtaining in individual buildings, as well as possible exceptions.

## 6.3. Article 4

6.3.1. The proposed "third-party financing" is an important step in the implementation of this Directive. Proper proof must be provided that third-party financing has actually taken place. Care must also be taken to ensure that contracts are only awarded to general contractors (a standard practice in the case of third-party financing) if the costs are lower than they would otherwise have been had the contract been split into separate lots, and if small and medium-sized companies are not put at a disadvantage. In this connection the Committee would also draw attention to the Directive on the award of public contracts<sup>3</sup>.

## 6.4. Article 5

6.4.1. Exchanging information on experiences is essential if Member State measures to thermally insulate new buildings are to be as effective as possible. Consideration should be given to how the Commission can assist the Member States with technical data and relevant research. Experiences already available in the Member States should also be taken into account.

6.4.2. The results should also be harnessed to achieve greater heat savings for the entire building stock. In the Committee's view, steps should be taken to ensure that only materials free of health risks are used for heat insulation purposes.

## 6.5. Articles 6 and 7

6.5.1. Member States are to ensure that regular inspections of heating installations and motor vehicles are carried out in order to optimize conditions of energy consumption and ensure minimum emissions of pollutants. A high standard of inspection is to be achieved in line with that already prevailing in a number of Member States, be it as a result of specific legislation or EC standards.

6.5.2. A high level of technology must be deployed in such inspections; inspection equipment and testing methods must

be comparable and the relevant provisions on the limitation of emissions must be observed.

6.5.3. The Commission should look at what steps can be taken if Member States fail to implement these guidelines properly. This also applies generally to all the provisions of the Directive.

## 6.6. Article 8

6.6.1. The Committee warmly applauds and endorses the Commission's efforts to ensure, through energy audits, that energy-saving schemes are also introduced into industrial undertakings. If such audits are to be comparable and standardized, a single audit framework should be used by all the Member States. Energy audits are also provided for under the terms of the draft Regulation on the Community's eco-audit scheme<sup>4</sup>.

## 6.7. Articles 9 and 10

6.7.1. We welcome the statement that conclusions from the two-yearly progress reports will only be drawn after consulting the European Parliament and the Economic and Social Committee.

6.7.2. Such a procedure will ensure that any adjustments to the Directive dictated by environmental requirements can be taken in good time.

6.7.3. The Committee warmly welcomes the Commission's proposal that the qualified majority voting system be used when amending the Directive.

## 6.8. Articles 11 and 12

6.8.1. The Directive should be adopted as soon as possible as a further major step towards improving the environment.

<sup>3</sup> OJ No. L 297 of 29 October 1992

<sup>4</sup> OJ No. C 76 of 27 March 1992





**OPINION**  
of the  
Economic and Social Committee  
on the  
**Proposal for a Council Decision concerning the promotion of  
renewable energy sources in the Community**  
(COM(92) 180 final)



On 16 July 1992, the Council decided to consult the Economic and Social Committee, under Article 130s of the Treaty establishing the European Economic Community, on the

*Proposal for a Council Decision concerning the promotion of renewable energy sources in the Community - ALTENER programme* (COM(92) 180 final).

The Section for Energy, Nuclear Questions and Research, which was responsible for preparing the Committee's work on the subject, adopted its Opinion on 30 October 1992. The Rapporteur was Mr von der DECKEN.

At its 301st Plenary Session (meeting of 24 November 1992), the Economic and Social Committee adopted the following unanimously:

## 1. Introduction

1.1. At its meeting of 29 October 1990, the joint Energy/Environment Council specified that the stabilization of CO<sub>2</sub> emissions by the year 2000 at the 1990 level of 2,738 million t should be the Community's objective.

1.2. In order to meet this commitment, a strategy involving a set of non-fiscal and fiscal measures was proposed by the Commission in October 1991. The aim of this strategy was to improve efficiency in the use of energy and to encourage the use of energy sources which are less polluting in terms of CO<sub>2</sub> emissions (SEC(91) 1744 final of 14 October 1991). In the absence of such measures, Community CO<sub>2</sub> emissions are forecast to increase by at least 12% between 1990 and the year 2000.

1.3. In this context, the Commission thinks that priority must be given to making greater use of renewable energy sources (or renewables), as these can make a significant contribution to stabilizing CO<sub>2</sub> emissions. However, this presupposes the adoption of measures to strengthen research, development and demonstration programmes and improve these energy sources' position on the market in relation to other sources.

1.4. This strategy was approved by the joint Energy/Environment Council on 13 December 1991. Point 8 of the conclusions adopted by the Council provides *inter alia* for the introduction at Community level of specific measures intended to encourage the greater development of new renewable energy sources.

1.5. The Commission intends to take action in three complementary fields. This action will be additional to national initiatives (for which it will provide a stimulus at the same time) and will cover:

- continuation and strengthening of research and development activities in the field of renewable energy sources (JOULE programme)<sup>1</sup> and of energy technology promotion (THERMIE programme)<sup>2</sup>;

- introduction of a Community energy/CO<sub>2</sub> tax, which should help to increase the competitiveness of renewables in particular;
- implementation of accompanying measures designed to draw maximum commercial benefit from research, development and demonstration efforts in the field of renewable energy sources and to create an environment favourable to their increased penetration of the market.

1.6. These measures are part of the Community action programme for promoting the penetration of renewable energy sources in 1993-1997: this programme has now been proposed by the Commission, and includes the draft Decision on which the Committee has been formally consulted.

1.7. This programme - ALTENER - should thus help to improve the use of local energy resources, make efficient use of public funds and protect the environment by limiting emissions of greenhouse gases and other pollutants. It should also play its part in the completion of the internal market and reduce the Community's dependence on imported energy.

1.8. In quantitative terms, implementation of the measures described in Point 1.5. should make it possible to achieve the following objectives by 2005:

- renewable energy sources' share of total energy demand to be increased from nearly 4% in 1991 to 5 or 6% in 2000 and 8% in 2005;
- electricity production from renewables (excluding large hydroelectric power stations) to be trebled;
- biofuels' share of motor vehicle fuel consumption to be increased to 5%.

1.9. The Commission thinks that, as a result, a 180 million t reduction in CO<sub>2</sub> emissions could be achieved by 2005. Implementation of the ALTENER programme alone should contribute to a one percentage point reduction in CO<sub>2</sub> emissions, i.e. slightly more than 30 million t, by the year 2000.

1.10. Four kinds of practical action are envisaged under the ALTENER programme:

- measures to promote the market for renewable energy sources and to integrate these sources into the internal energy market.  
These measures will mainly involve the harmonization of legislation and the formulation of common technical standards;
- financial and economic measures;
- training, information and outreach activities;

<sup>1</sup> Council Decision of 14 March 1989 on a specific technological research and development programme in the energy field -non-nuclear energy sources and rational use of energy (1989-1992) (JOULE programme) - OJ No. L 98 of 11 April 1989, page 13

<sup>2</sup> Council Regulation of 29 June 1990 - OJ No. L 185 of 17 July 1990, page 1

— cooperation with third countries (developing and Central and Eastern European countries, including the countries of the former Soviet Union).

1.11. The Decision proposed by the Commission under this programme seeks to enable the Community to contribute financially to a range of activities designed to promote renewable energy sources. Four categories of activity are envisaged:

- studies and technical evaluations for defining technical standards or specifications;
- measures in support of national initiatives aimed at extending or creating infrastructures for renewables;
- measures to foster the creation of an information network designed to promote increased coordination between national, Community and international activities;
- industrial pilot projects relating to biomass energy, in particular the production of biofuels and biogas and the use of short-rotation coppices and C4 plants.

1.12. An allocation of 40 MECU from the Community budget is proposed for the implementation of this programme, which will run for five years.

1.13. The draft Decision lays down the rates of Community financing and the selection procedures for each of the activities envisaged. It also provides for an interim report to be drawn up during the third year, accompanied if necessary by proposed amendments to the programme, and for a final report.

## 2. The development of renewable energy sources in the context of Community energy policy

2.1. The ALTENER programme constitutes the latest attempt to ensure a substantial increase in the contribution of renewable energy sources to the Community's energy balance.

2.2. Since the Council's adoption on 16 September 1986 of new Community energy policy objectives for 1995<sup>3</sup>, the Committee has had the opportunity of commenting on several draft Council resolutions or recommendations, all of which have been designed to create a more favourable environment and conditions for the increased development and use of renewables in the Community.

2.3. In this connection, it is regrettable that, beyond the information contained in the Explanatory Memorandum to the proposed Decision, no report has ever been sent to the Committee which would have allowed it to make a fuller assessment of renewable energy developments in the Community over recent years. Such reports would also have been particularly useful for the evaluation of the action programme that is now proposed.

2.4. It is also regrettable that to date there are no reliable, coherent and harmonized statistics which would make it possible to be more specific about the contribution of renewa-

ble energy sources to the Community's energy balance and which could serve as a basis for development projections.

In particular, it would have been useful to have such statistics on primary and secondary energy production and the trend in energy consumption in the various sectors of the economy.

2.4.1. In this connection, the Committee welcomes the measures currently being taken by the Commission, in collaboration with the Member States, with a view to developing a system for the collection and provision of statistics on renewable energy sources on a regular and comparable basis. The project was launched in 1990 by the Commission and has already enabled comparable, albeit in some cases still incomplete, statistics to be gathered for 1989.

2.5. Having said this, it must be recognized that, notwithstanding the various Council recommendations and resolutions, there has been no significant upsurge in renewable energy sources in recent years.

2.6. In 1985, the contribution of renewables (marketed and statistically recorded) to total energy demand was estimated to be 15 million toe, or scarcely 1%. Moreover, some 85% of this renewable energy was produced in hydro-electric stations. Again in 1985, genuinely exploitable potential by the year 2000 was put at between 42 and 52 million toe.

2.7. Nevertheless, as the Commission stressed in its May 1988 Communication: "The main Findings of the Commission's Review of Member States' Energy Policies" (COM(88) 174 final), these forecasts were made before the dramatic fall in oil prices, since when there has been a deterioration both in the overall economic situation and in the competitiveness of renewable energy sources (see Point 62 of the Communication).

2.8. In 1991, renewable energy sales covered less than 2% of primary energy demand, totalling some 23 million toe. Large hydro-electric plants accounted for more than 13 million toe of this total. If fuel-wood is also taken into account (20 million toe), renewable energy's share rises to nearly 4%.

2.9. According to the Commission, the ALTENER programme should help to raise renewable energy's contribution towards meeting the Community's primary energy demand to 109 million toe, or 8% of total energy consumption, by 2005.

2.10. However, almost half of this increase is expected to derive from a greater exploitation of biomass - including fuel-wood - the contribution of which should rise from 25.4 to 66 million toe. The contribution of biofuels - which are not produced at all at the moment - should in turn become 11 million toe by the year 2005.

<sup>3</sup> OJ No. C 241, 25 September 1986, page 1

2.11. The Commission considers that biomass "is the only renewable energy source which will be able to make a substantial contribution to the replacement of conventional fuels". At the same time, it stresses that "priority will be given to the commercial penetration of biofuels and fuels of agricultural origin" (Explanatory Memorandum, Point 56).

2.12. The Commission also thinks that increasing renewable energy sources' contribution to the Community's energy balance will mainly involve (Explanatory Memorandum, Point 38):

- the exploitation of urban and industrial waste;
- wind power, and
- small hydro.

### 3. General comments on the ALTENER programme

#### 3.1. Overall assessment

3.1.1. The Committee has on numerous occasions endorsed the increased development of renewable energy sources, as much from a concern to give Europe greater energy security as on broader environmental and socio-economic grounds<sup>4</sup>.

3.1.2. In this context, it has also frequently questioned whether the Member States really have the political will to create the conditions which would allow renewable sources to make an effective contribution to Community energy supplies. It has called, in particular, for the removal of legal, regulatory and administrative obstacles and barriers arising from standardization procedures in order to ensure the widespread use of renewable sources.

3.1.3. The Committee has also stressed that the full potential of renewable energy sources cannot be exploited if the general infrastructure remains as it is.

3.1.4. It also thinks that the objectives fixed for this and other energy policy areas cannot be achieved unless they fit in with the activities conducted within the framework of other Community sectoral policies which directly affect the attainment of those objectives.

3.1.5. The Committee therefore reiterates its support for the Commission's initiatives in this area and endorses the presentation of the ALTENER programme which represents the latest attempt - this time including quantified objectives - to ensure the development and greater permanent use of renewable energy sources.

3.1.6. Nevertheless, it notes that the Commission's proposed programme is based on an analysis and evaluation of the state of development of renewables in the Community and of the prospects in this field, which the Committee - not having any information apart from that contained in the Explanatory Memorandum - is scarcely in a position to judge by itself.

3.1.7. Thus, the Committee can only note the favourable developments which are reported to have taken place in this area since 1988 and the obvious need for consolidation, in particular by supporting national action with initiatives which will help to create the necessary conditions for a permanent breakthrough in renewable energy sources that will not be jeopardized by falls in the prices of traditional energy sources.

3.1.8. The Committee also urges that this new expression of national will be reflected in increased financial support for research, development and demonstration activities in the renewables field. In recent years there has, after all, been a steady reduction in appropriations for this research sector. In this connection, account should be taken of the importance of such an effort for the goal of strengthening economic and social cohesion within the Community (see point 3.2. below).

3.1.9. The Committee thinks that the objectives fixed under the ALTENER programme are particularly ambitious and that the real possibility of achieving them should not be overestimated. The minimal growth in renewables in recent years, notwithstanding numerous declarations of intent, suggests the need for a certain scepticism, particularly as regards the goal of increasing renewables' contribution to total energy demand, from nearly 4% in 1991 to 8% in 2005.

3.1.10. Even assuming that such a goal could be attained, it would be wrong to overestimate the role of renewable energy either in the context of reducing CO<sub>2</sub> emissions or with regard to Community energy supplies.

3.1.11. On this latter point, it should be remembered that total energy consumption in the Community is forecast to increase by 20.7% between now and the year 2005 (i.e. from 1160 to 1400 million toe) whereas, even on the most optimistic assumption, only 4% of this additional demand will be met by renewable energy sources over the same period<sup>5</sup>.

<sup>4</sup> In this connection, see the following in particular:

- a) A Community orientation to develop new and renewable energy sources. ESC Opinion of 18 August 1986 - OJ No. C 316 of 9 December 1986, page 1
- b) Proposal for a Council Recommendation to the Member States on developing the exploitation of renewable energy sources in the Community. ESC Opinion of 27 January 1988 - OJ No. C 80 of 28 March 1988, page 5
- c) Proposal for a Council Recommendation to the Member States to promote cooperation between public electricity supply companies and auto-producers of electricity. ESC Opinion of 27 October 1988 - OJ No. C 337 of 31 December 1988, page 64

<sup>5</sup> According to the latest forecasts, total energy consumption should not in fact increase by more than a little over 19% between 1990 and 2005, from 1226 to 1461 million toe. In this case only 7.4% of the Community's total energy demand will be met by renewables - see Energy in Europe, special issue, September 1992, "A view to the future"

### 3.2. *Renewable energy sources and economic and social cohesion*

3.2.1. The Committee would, however, stress the importance of developing renewable energy sources with a view to strengthening the Community's internal economic and social cohesion.

3.2.2. In this connection, available statistics are very general and throw no real light on the state of renewables development in the different Community states and regions, where their contribution to primary energy supplies sometimes exceeds 10%.

3.2.3. The exploitation of renewable energy sources thus represents a crucial factor for economic and social development, particularly in remote or peripheral regions which have a relatively underdeveloped energy infrastructure and/or a large-scale exploitable energy potential of their own.

3.2.4. These aspects have also been highlighted in numerous earlier ESC Opinions (see, in particular, footnote 4 page 17).

3.2.5. The Committee thinks that the large-scale development of renewable energy sources under the ALTENER programme raises several specific questions which should also be considered.

### 3.3. *Impact on the environment*

3.3.1. First, it would draw attention to the potentially adverse environmental effect of such a development which could, in time, largely offset the expected benefits with regard to the reduction of CO<sub>2</sub> emissions.

3.3.2. For example, noise pollution could result from the more widespread use of aerogenerators, environmental damage could be caused by the development of small hydro and short-rotation coppices and conifers could damage the soil and surface water.

3.3.3. Some of the Commission's statements on this matter must be treated with great caution and the Committee therefore calls for a regular assessment of the environmental impact of the increased development of the different forms of renewable energy.

3.3.4. These considerations do nothing to alter the Committee's view that, at present, in many cases, renewable energy sources have a potentially more favourable environmental impact than traditional fuels, thereby enhancing the economic importance of their development.

### 3.4. *Electricity production from renewable energy sources in the context of the internal energy market*

3.4.1. The second question is whether it really will be possible to triple electricity production from renewable energy sources, especially from small hydro, the contribution of which would double between 1991 and 2005.

3.4.2. In its Opinion of October 1988 on the proposal for a Council Recommendation to the Member States to promote cooperation between public electricity supply companies and auto-producers of electricity (see footnote 4 c), page 7), the Committee endorsed the Commission's initiatives to create a favourable framework for the development of electricity production from renewable energy sources and itself made several suggestions along these lines.

3.4.3. In this context, it endorsed the construction and operation of small hydro-electric plants and thus approves the removal of the legal, regulatory and administrative obstacles to their introduction.

3.4.4. Nevertheless, the removal of these obstacles would not, in itself, be sufficient. It must also be remembered that, in most cases - and particularly that of small hydro - the economic viability of producing electricity from renewable energy sources can be guaranteed only in the long term and, even then, only if direct costs are taken into account.

3.4.5. Attainment of the Commission's goal thus presupposes that the electricity generated in this way can be sold at a price which at least makes it possible to cover investment costs and all direct costs. This raises the question of whether such an objective is compatible with the proposed liberalization of the electricity sector as part of the creation of a more open and competitive internal energy market.

3.4.6. The Committee therefore calls for an examination of the impact which the completion of the internal electricity market will have on the development of renewable energy sources.

### 3.5. *Increased use of biomass and biofuels*

3.5.1. The importance attached by the Commission to biomass and biofuels also prompts the Committee to make certain comments.

3.5.2. First, it would recall that it has itself endorsed the increased use of agricultural and forestry resources for energy purposes and particularly for biofuels production<sup>6</sup>.

3.5.3. Thus, whilst supporting exploitation of the possible synergies between the CAP and energy policy, the Committee drew attention to "the need to avoid intensified farming techniques inflicting damage on the countryside, and thereby endangering the agricultural fabric and harming the environment" (see footnote 6 a) below).

<sup>6</sup> See, in this connection, the following in particular:

- a) Increasing the use of agricultural and forestry resources in the non-food industrial and energy sectors: prospects opened up by research and technological innovation. ESC Opinion of 29 March 1990 - OJ No. 124 of 21 May 1990, page 47
- b) Proposal for a Council Directive on excise duties on motor fuels from agricultural sources. ESC Opinion of 26 May 1992 - OJ No. C 233 of 31 August 1992, page 1

3.5.4. In this connection the Committee notes that, to reach the target set by the Commission, namely securing for biofuels a market share of 5% of total fuel consumption by motor vehicles, it is stated quite specifically that an agricultural area of 7 million hectares will be necessary to produce 11 million toe. This figure represents nearly 5.5% of the utilized agricultural area of the Community, estimated to be 128,000 million hectares<sup>7</sup>.

3.5.4.1. This - relatively large - percentage should allay any fears which the Commission's objective may raise from the environmental standpoint and with regard to the policy of reducing agricultural subsidies.

3.5.5. It also seems necessary to ask (a) on what premises is the Commission's objective based, in particular as regards the growth in the motor vehicle fleet between now and the year 2005 and fuel consumption forecasts and (b) how this fits in with the "Community strategy for sustainable mobility" as formulated by the Commission in its Green Paper on the Impact of Transport on the Environment (COM(92) 46 final).

3.5.6. The Committee thinks that, in addition to incentives for the construction of pilot plants manufacturing biodiesel, the ALTENER programme should cover industrial pilot plants producing oxygenated petrol additives (bioethanol).

### 3.6. *Thermal solar energy*

3.6.1. The use of thermal solar energy varies greatly from one region of the EC to another. This applies, as one would expect on climatic grounds, to the difference between the southern and northern countries; but even within the southern countries themselves there are considerable differences, namely a pronounced decline from East to West. Greece leads the way by far, followed by France and Italy. There is very little use of thermal solar energy in Spain. The same applies to the production of solar panels.

3.6.2. The Committee calls on the Commission to look into the reasons for these differences and to develop strategies designed, in particular, to encourage market penetration in southern countries where thermal solar energy is little used.

## 4. **Specific comments on the draft Decision**

4.1. The Committee approves the proposal for a Decision provided that account is taken of the following comments and proposed amendments or additions:

### 4.2. *Budgetary aspects*

4.2.1. In the first place, the Committee would point out that no allocation has yet been fixed, even by way of guidance, for certain financial support measures and cooperation with third countries.

4.2.2. In this context, it finds it quite remarkable that no information is provided on the budgetary implications of the development of biofuels despite the priority attached to them.

4.2.3. Secondly, the Committee notes that the draft Decision itself contains no provision specifying the level of appropriations from the Community budget which is considered necessary for the execution of the programme. The figure of 40 MECU mentioned in the Commission document and its breakdown are only rough estimates, a fact which merely accentuates their fragmentary nature.

4.2.4. The Commission explains that such a provision has been omitted because of its concern to preserve a negotiating margin with the different branches of the Budget Authority in order to secure the annual allocation of the appropriations it considers necessary for the implementation of the programme, and to retain sufficient flexibility to deal with unforeseen events and to switch priorities if necessary.

4.2.5. Even so, the Committee is concerned that the financing of the ALTENER programme may be subject to the uncertainties of the budget procedure unless there is a genuine political commitment on the part of the Member States to help develop renewable energy sources which is reflected, especially at a financial level, in the Decision to be adopted.

4.2.6. The Committee also wonders whether the Commission's approach might not cast doubt on the determination of the Community and its Member States to make an effective and significant contribution to the reduction of CO<sub>2</sub> emissions, in particular through a firm commitment to renewable energy sources.

### 4.3. *Action benefiting from Community funding*

4.3.1. The Committee calls for the Decision to specify the selection criteria and procedures applicable to the measures which are to benefit from Community funding.

4.3.2. It also thinks that all measures covered by such funding must be the subject of periodic progress reports in order, in particular, to ensure the efficient management of Community appropriations.

### 4.4. *Evaluation of programme results*

4.4.1. The Commission has not set a target figure for increasing renewable energy sources' share of total primary energy demand by 1997, i.e. by the end of the ALTENER programme.

4.4.2. The Committee therefore wonders on what basis it would be possible to evaluate progress towards attainment of the objectives fixed for 2005, through the implementation of, besides the ALTENER programme, all the measures referred to in point 1.5. above.

<sup>7</sup> Cf. 1991 Report on the Agricultural Situation in the Community, EC Commission, 1992



4.4.3. The Committee also calls for an evaluation of the following on completion of the programme:

- the impact of national and Community action on the environment, where this is appropriate;
- the programme's contribution to attainment of the goal of strengthening the Community's internal economic and social cohesion.

4.5. *Transmission to the ESC of the reports referred to in Article 8*

4.5.1. The Committee calls for Article 8 of the draft Decision to be amended to ensure that it, too, receives both the interim report to be drawn up during the third year of the programme and the overall evaluation report to be drawn up on the programme's completion.

**OPINION**  
of the  
Economic and Social Committee  
on the  
**Proposal for a Council Directive introducing a tax on carbon dioxide emissions and energy**  
(COM(92) 226 final)



On 16 July 1992 the Council decided to consult the Economic and Social Committee, under Article 99 of the EEC Treaty, on the

*Proposal for a Council Directive introducing a tax on carbon dioxide emissions and energy*  
(COM(92) 226 final).

The Section for Economic, Financial and Monetary Questions, which was responsible for preparing the Committee's work on the subject, adopted its Opinion on 9 February 1993. The Rapporteur was Mr SCHMITZ.

At its 303rd Plenary Session (meeting of 24 February), the Economic and Social Committee adopted the following Opinion by 92 votes to 37, with six abstentions.

## 1. General comments

1.1. The Committee endorses the Draft Directive's aim<sup>1</sup>, namely to limit the emission of greenhouse gases and to promote rational use of energy; the Committee would refer in this context to its Own-initiative Opinion on energy and the environment<sup>2</sup>. The Committee does, however, have some reservations about the form of the proposed instrument.

1.1.1. A variety of measures will be required to attain the above-mentioned objectives. In the Committee's view, market-management instruments such as taxes and levies, tax incentives and state aid, can be an important adjunct to regulatory measures<sup>3</sup>. The influence of market-management instruments should not, however, be over-estimated. They are all the more likely to be effective if the parties receiving the subsidies or paying the taxes and levies have **alternative courses of action** whereby the desired objectives can be met.

1.1.2. Energy and transport policy measures should also be adopted and every effort made to ensure that policy in these two fields does not impede the reduction of greenhouse gases and rational use of energy.

1.1.3. Greenhouse gases are a worldwide phenomenon and worldwide action is needed. With this aim in view, the EC should take effective action in its dealings with other OECD states, eastern European nations, the Commonwealth of Independent States (CIS), the major newly industrialized countries and the developing countries.

1.1.4. With regard to market-management instruments, a Community approach should be given priority over national measures in order to avoid distortions of competition within the Community.

1.2. The introduction of a strategy to curtail greenhouse gas emissions and promote the rational use of energy must not jeopardize the ability of EC industry to compete with its rivals in non-EC countries.

1.2.1. If politicians fail to act in good time, and major changes occur in the world climate, pressure from public

opinion may oblige politicians to take drastic measures which preclude rational industrial restructuring.

1.2.2. The necessary investment should therefore be initiated voluntarily and as swiftly as possible. Firms which adjust to change in environmental policy in good time thereby frequently secure a competitive edge. So far Japanese industry seems to have taken the lead in this respect. European industry should undertake the necessary innovations so as to avoid being left behind.

1.2.3. It is however essential that the European economy should be given adequate time to undertake adjustment measures and know what general economic (including financial incentives) and legal framework it is going to have to operate in, at least in the medium term. Specific aid should be provided for energy-intensive sectors of the economy.

1.2.4. Positive measures which could be promoted by Member States include fiscal stimulus for introducing more efficient and environmentally friendly technology and increasing energy savings. The following are examples of possible actions which could be easily undertaken:

- tax rebates for industry if energy consumption is better than the figures laid down by law;
- provide discounts yearly or every two years for domestic and commercial consumers if their energy consumption figures are better than those laid down by law;
- fiscal rebates for those households which install highly efficient kitchens (cooker, oven, fridge) and heating systems (boilers);
- tax incentives on investments in more efficient and environmentally friendly technology; and
- information and awareness campaigns.

1.3. There is considerable doubt as to whether the carbon dioxide component of the proposed tax can bring about a significant level of substitution, given that the structure of energy sources is determined by technical considerations. Assuming that such substitution is possible in the medium term, a series of questions needs to be addressed.

1.3.1. The introduction of a tax on carbon dioxide emissions would give nuclear fuels an advantage over energy generated from fossil fuels. This is justifiable insofar as nuclear energy helps to reduce greenhouse gases. In the Committee's view, the economic preference for nuclear energy can only be accepted if other EC level measures are taken to ensure that the costs associated with the hazards of using nuclear energy (in particular the disposal of nuclear waste and decommissioning) are fully borne by nuclear power station operators, in accordance with the "polluter pays" principle.

<sup>1</sup> Council Decision of 29 October 1990

<sup>2</sup> CES 879/91

<sup>3</sup> See the Committee's Opinion on environmental policy and the internal market (CES 1052/90)

1.3.2. Scientists are unable to agree on the relative "greenhouse potential" of the various fossil fuels viewed over different periods of time. In the long-term perspective (100 years), carbon dioxide is the most important greenhouse gas and lignite is the fuel which causes the most serious damage. The "greenhouse" potential ranking after lignite is then as follows: bituminous coal, oil and, finally, natural gas. In the short-term perspective, account must, however, also be taken of methane. Methane has a relatively high greenhouse potential but only remains in the atmosphere for a relatively short time. Given that at present production of natural gas does in fact yield relatively high levels of methane emissions - and this is likely to be the case for the foreseeable future - one school of scientific thought, which has to be taken seriously, holds that in the short-term perspective (20 years) the greenhouse potential of natural gas (CO<sub>2</sub> + methane) is higher than that of oil. If these scientific assertions are correct, there is a danger that a tax levied solely on carbon dioxide emissions which does not take account of the methane factor will bring about a large-scale restructuring, inter alia from oil to gas consumption, leading consequently in the medium term to an increase rather than a reduction in the global greenhouse potential. In view of the fact that the Council has set a short-term stabilization objective (for the year 2000) and is also banking on restructuring of the energy market in the medium term, the *medium-term* climatical impact, including the effect of the methane factor, must be examined before any assessment can be made of whether the carbon dioxide component of the tax, as proposed by the Commission, will have a beneficial or a detrimental effect on the climate.

1.3.3. World energy consumption is increasing<sup>4</sup>. It is estimated that 80% of the growth in energy consumption will be in the developing countries. This is understandable considering the huge difference in energy consumption per head in industrialised and developing countries. If this trend is not halted, climate protection policy, as a whole, will fail. A prerequisite for the success of any climate protection policy is therefore, in the short term, the stabilization of world energy consumption and, in the long term, the reduction of consumption, especially in the industrial countries on account of their high per capita consumption. The energy component of the proposed tax is primarily geared to the achievement of this objective. In this respect the goals of energy policy and climate protection policy are in complete harmony. The main aim of the carbon dioxide component of the proposed tax is to change the structure of fuel consumption (top priority is given to natural gas whereas coal consumption is set to decline). Measured over the long term, however, stocks of all fossil fuels are in short supply. Coal, too, will be needed in the long term. In the long term, too, the carbon dioxide component of the proposed tax will, in the final analysis, only change the order in which fuels are consumed; it will not, however, definitively prevent atmospheric factors from damaging the climate (energy policy pursues an erratic course, with high re-equipment costs for the economy). Furthermore, despite the current short-term surplus of energy products, the relative situation as regards shortage of supply (stocks of the various individual fuels will

last for differing periods) will start to influence the price structure by the first half of the next century at the latest. Consequently, as stocks of oil and natural gas will run out more quickly their relative shortage will be more rapidly exacerbated than the shortage of coal and their price will likewise increase more rapidly than that of coal. It is perfectly possible that these market-driven increases in the price of oil and natural gas will, within a few decades, more than cancel out the increase in the cost of coal due to taxation. In this scenario, the question arises as to whether the likely consequent increase in the use of imported coal will not be in total contradiction, from an energy policy standpoint (security of supply), to the earlier policy of cutting back the Community's coal production capacity.

1.3.4. The Committee therefore has doubts about the carbon dioxide component of the tax, as proposed by the Commission.

1.4. The Committee has repeatedly expressed its support for the "polluter pays" principle. The application of this principle to greenhouse gases is difficult given their global nature and long-term effect. The Committee nevertheless considers that at least part of the external costs generated by greenhouse gases should be internalized. For this reason the Committee calls for a tax on emissions of the relevant greenhouse gases, carbon dioxide emissions and methane releases in energy production in particular.

1.5. Greenhouse gas emissions can only be curbed effectively by worldwide action. For this reason, consultations should be held with the other OECD countries and the leading newly industrialized countries *before the greenhouse gas tax proposed by the Committee is introduced* in the EC. The introduction of the greenhouse gas tax should form only one part of a package of measures (including research and development) enshrined in a worldwide agreement, along the lines of the Montreal agreement on CFCs, to curb greenhouse gas emissions. Exemptions should not be permitted. Under this agreement a substantial proportion of the revenue from the greenhouse gas tax should be used to underpin investments in measures to reduce greenhouse gas emissions in the developing countries, Eastern Europe and the CIS. A substantial reduction in greenhouse gas emissions can be achieved in these countries at relatively low cost.

1.5.1. The Committee recognizes that there will be technical problems with the introduction of a general greenhouse gas tax. With adequate political will, however, it will be

<sup>4</sup> Assessments made at the XVth World Energy Conference held in September 1992 indicate that in the period 1990-2020, overall primary energy consumption will increase by 53%

feasible to get close to the goal of gradually extending the tax to as many major greenhouse gases as possible<sup>5</sup>. In the first phase the methane released by the energy sector should be taxed as well as CO<sub>2</sub> emissions.

1.5.2. In order to ensure that such negotiations are successful, the Community should decide what form the greenhouse gas tax should take before the talks get underway. The tax should, however, be lower than that levied on the carbon dioxide component of the Commission's proposed carbon dioxide/energy tax, not least to improve the chances of reaching agreement with non-EC countries.

1.5.3. The Community should introduce measures which enable the developing countries to participate in actions to reduce greenhouse gas emissions. The Community should also undertake to use part of the greenhouse gas tax revenue to help the developing countries to make the necessary changes. The provision of such financial support could also improve the Community's negotiating position.

1.5.4. The Committee shares the concern that unilateral Community action could, in the short term, create competition problems for individual sectors of EC industry. The Committee would, however, warn against making the introduction of a greenhouse gas tax dependent upon the attitude of individual OECD States.

1.6. The Committee generally endorses the energy components of the proposed tax as they could make an important contribution to securing rational use of energy, promoting the use of renewable energy sources and reducing greenhouse gas emissions.

1.6.1. Empirical research has confirmed that increases in energy prices promote a more rational use of energy in the medium term<sup>6</sup>. An important consideration here, however, is that general, long-term conditions should be sufficiently predictable to enable business and private consumers to plan ahead. This raises the question as to whether erratic fluctuations in world energy prices should be cushioned by flexible EC arrangements.

1.6.2. A long-term increase in energy prices is an important economic prerequisite for viable investment in nuclear fusion, renewable raw materials (agriculture), and other renewable energy sources. Research, into solar energy, for example, has demonstrated that renewable sources of energy, in particular hydrogen, could corner a large share of the electricity market if energy prices increase<sup>7</sup>.

1.6.3. The Committee does, however, reject the imposition of an energy tax that will be used to cover general budget shortfalls. The Committee therefore proposes that an energy levy, imposed at national level, be introduced, and that the proceeds be used for the specific purpose of promoting investments in energy-savings, insofar as the resultant energy consumption figures are better than those laid down by law, for promoting investments in renewable sources of energy and for preventing social hardship amongst private

and small business consumers. In this way the energy levy will also make a substantial contribution to curbing emissions which pollute the environment, such as emissions of greenhouse gases. Rising energy consumption in the Community since 1986 has also resulted in a steady rise in CO<sub>2</sub> emissions<sup>8</sup>. It is not clear to what extent the fall in oil prices has played a part in this.

1.6.4. The development of energy-saving industrial plant and consumer goods and of installations to produce energy from renewable sources is an important contribution to strengthening the competitiveness of European industry. Hence the energy levy has not only an environmental objective but is also important for industrial policy. The Committee therefore urges exemption from the levy for hydroelectric installations, together with the other renewable sources of energy. It is essential to involve the two sides of industry, both at EC level and at the level of the Member States, in this matter.

1.6.5. In accepting the Commission proposal as part of an overall energy package which also contains non fiscal measures to decrease CO<sub>2</sub> emissions and increase efficiency and savings, the Committee, while enthusiastically supporting the programmes, suggests that greater emphasis be placed on THERMIE and ALTENER. The new SAVE programme, however, is completely inadequate to provide a substantial contribution and therefore should be strengthened to at least its original position.

1.7. For the Commission, the introduction of the carbon dioxide and energy tax is conditional on the preservation of tax neutrality. Member States will, however, be responsible for determining the actual procedures to be used.

5

	Relative contribution to the greenhouse effect, measured over a 100-year period	Lifespan	Sources known/unknown?
Carbonic gas	61.0%	long	known
Methane	15.0%	short	semi-quantitative information available
Nitrous oxide	4.0%	long	qualitative information available
CFC	11.0%	long	known
HCFC-22	0.5%	generally short	known
Miscellaneous (ozone)	8.5%	short	qualitative information available

Source: IPCC

<sup>6</sup> Study by Professor Wolfson on the extent to which energy consumption is influenced by energy prices  
"Regulatory taxation does reduce emissions, with medium-term elasticities ranging from -0.1 to -1.0, and broad-based and OECD-wide levies will be shifted backwards in up to 30% lower prices at source" (quotation)

<sup>7</sup> Commission of Inquiry "Safeguards for the earth's atmosphere" of the German Bundestag of 2.10.1990

<sup>8</sup> Commission working paper: "The energy consequences of the proposed CO<sub>2</sub>-energy tax" dated 23 October 1992 (SEC(92) 1996)

1.7.1. The Committee agrees with the Commission that it is essential to safeguard the ability of EC industry to compete with its leading rivals. Tax neutrality does not, however, fall within the terms of reference of the European Community and is left to the Member States. If it adopts an energy levy, the Council can recommend to the Member States that they introduce compensatory fiscal measures. Such measures should not be in conflict with EC competition policy and should therefore be closely monitored by the Commission.

1.7.2. In order to ensure that the proceeds of the levy are used for specific purposes, the Committee recommends that Member States should pay the revenue into special funds. The Committee proposes that three funds be set up, one for industry, one for the energy utilities and one for private and small business consumers. The sectors concerned should be consulted over the allocation of money from these funds. In this context, support could be given to energy-saving programmes adopted voluntarily by industry. The EC should make appropriate arrangements, which should however be flexible enough to allow effective measures to be taken, in line with national and regional conditions, to bring about energy savings and promote the use of renewable sources of energy without inflicting social hardship on private or small business consumers.

1.8. The financial burden imposed on industry and private consumers by a Community-wide greenhouse gas tax and energy levy will vary from region to region. The Committee therefore recommends selective regional policy measures financed from the EC funds. Account should be taken of each country's requirements and level of development. Money from the Cohesion Fund should be used to promote public and private investment in rational energy use. Back-up arrangements should be introduced as part of a special "Community initiative" which would tap the resources of the Regional Fund. The Commission should draw up a proposal along these lines without delay.

## 2. Specific comments

2.1. The Committee advocates the introduction of two different, complementary instruments:

- a tax on greenhouse gas emissions;
- a levy on the energy content.

The greenhouse gas tax should be levied without exemption on CO<sub>2</sub> and the release of methane in energy production. The tax should however be lower than that proposed by the Commission for carbon dioxide emissions. Overall, including the energy levy, this would give a lower tax.

The introduction of a tax on greenhouse gas emissions and a levy on the energy content should be postponed until the economic situation is more favourable than the situation currently prevailing.

The following comments on the individual Articles of the Draft Directive relate to the *energy component* of the Commission's proposed tax.

## 2.2. Article 1

### 2.2.1. Article 1(1)

An energy *levy* should be introduced instead of a general energy *tax*. The energy levy proceeds should be used for the specific purpose of promoting investments in energy savings, insofar as the energy consumption figures thereby obtained are better than those laid down by law, for promoting investments in renewable sources of energy and for supporting measures to alleviate hardship amongst private consumers and small business consumers. The Member States should examine the case for establishing funds in this respect (one for industry, one for energy utilities and one for private and small business consumers).

## 2.3. Article 9

### 2.3.1. Article 9(3)

The Committee endorses the proposed phased increase in the rate of the levy as a sudden sharp increase would make it impossible to achieve the desired structural adjustment process<sup>9</sup>.

### 2.3.2. Article 9(3)

It should be possible to suspend temporarily the proposed increases in the rate of the levy in the event of sharp price increases triggered by conditions on the world market. It should be possible to bring forward the increase in the rate of the levy in the event of sharp falls in prices.

## 2.4. Article 10

### 2.4.1. Article 10(1)

The Committee can endorse the granting of a reduction in the rate of the levy only on condition that such a reduction is for a limited period.

### 2.4.2. Article 10(2)

Partial or complete exemption from the levy should be authorized only in cases where energy consumption is better than the figures laid down by law.

## 2.5. Article 11

In order to avoid "knock-on" effects, tax cuts and tax refunds should be granted only if firms are thereby enabled to achieve better energy consumption figures than those laid down by law. The Commission should introduce appropriate proposals in accordance with the procedure set out in Article 13 of its Draft.

<sup>9</sup> IEA World Energy Model/energy market outlook

"The macro-economic effect of a carbon tax could reduce GDP by 0.5% to 3% in 2000, provided all tax revenues are recycled; the macro-economic effect can be reduced by phasing in the tax, to give households and producers time to adjust their consumption patterns or their production techniques."

## Amendment

The following proposed amendment (counter-Opinion), which received at least one quarter of the votes cast, was defeated in the debate:

Delete the text from point 1 onwards, and replace it by the following:

### ''1. General context

The exact nature, mechanisms and scale of the risk of an increase in global warming has not yet been adequately gauged. It is therefore appropriate to display moderation when deciding on the scale of the measures to be taken. It also follows that it is necessary to evaluate all possible measures and identify those which are the most effective in environmental terms and the least risky or costly in economic terms. Furthermore, the Committee underlines the vital importance of making a realistic appraisal of the scope for the adjustments - or even radical changes - of technology without which the CO<sub>2</sub> emission objectives will be impossible to attain or will cause major economic and social damage. The Commission's Proposal for a Directive is totally inadequate in this respect.

Bearing in mind this serious shortcoming, the proposal to introduce a tax designed to reduce CO<sub>2</sub> emissions in the EC should be considered from four fundamental standpoints:

- its effectiveness in achieving the goal which has been set, namely to stabilize global CO<sub>2</sub> emissions over the next ten years by reducing the unit energy consumption of industry and by bringing about a switch-over to the least polluting forms of energy and products which use the lowest amount of energy;
- maintenance of the international competitiveness of EC industry;
- the aggregate effectiveness of other measures to stabilize global CO<sub>2</sub> emissions;
- the likely impact of measures taken in respect of the other greenhouse gases.

### 2. Objections to the proposal for a Directive

Against the background described above, the Committee considers that the Commission's Proposal for a Directive is wholly unsatisfactory for four main reasons:

- firstly, *the effectiveness of the proposed tax will be extremely limited*. According to the macro-economic calculations made in 1990 and 1991, the proposed tax will barely reduce unit energy consumption by more than a few percentage points. The Commission itself expects the proposed tax to make only a minor contribution (25%) to the achievement of its goal of stabilizing CO<sub>2</sub> emissions within the next eight to ten years. A recent study by DG XVII and various industrial studies have confirmed this very low level of effectiveness;

- secondly, *the competitiveness of a large number of EC industries would be seriously jeopardized if the EC were to take unilateral action*. In this context, the Committee draws the attention of the EC bodies to the need to take account not only of OECD states but also of potential competition from countries such as Brazil, central and eastern European countries and the Commonwealth of Independent States (CIS) in the sectors which would be mainly concerned by the proposed tax. The principle of "conditionality" laid down by the EC Council of Ministers must therefore have the broadest possible geographical coverage;
- thirdly, the Committee points out that *there are other measures which could have at least the very limited ecological impact of the proposed tax, without bringing about the sectoral and general imbalances which would be caused by this tax*. Two measures should be highlighted here:
  - firstly, the introduction, in collaboration with the sectors and enterprises concerned, of a system of commitments to make additional energy savings at least equivalent to those produced by the proposed tax;
  - secondly, in view of the need to ensure that the money spent has the maximum impact, the effectiveness of the policies pursued must be judged at world level, since we are dealing here with a problem affecting the whole of the planet. Account must therefore be taken of the fact that the EC, thanks to its relatively high level of energy and environmental efficiency, is responsible for only 13% of world CO<sub>2</sub> emissions. With a view to optimizing the effectiveness of the resources devoted to environmental protection, the question arises as to whether the funds which are earmarked by the EC for measures to reduce CO<sub>2</sub> emissions would not be better spent in those countries which have the lowest level of energy efficiency and make least use of clean forms of energy, such as China, the European countries which were formally under Communist control and Third World countries. It has to be recognized that every ecu spent in those countries will provide a much greater ecological return than if it were spent in the EC;
- fourthly, *the Committee deplores the failure of the Commission to look at the contributions which a reduction in other greenhouse gases could make towards the goal of stabilizing emissions*. Recent studies by the French Agency for the Environment and Energy Management (ADEME) have demonstrated that the current virtually spontaneous moves to reduce emission levels of other greenhouse gases are likely to bring about, by the year 2010, a considerable reduction in overall greenhouse gas emissions in France, even if a slight increase in CO<sub>2</sub> emissions occurs as a result of a decision to implement only those emission-reduction measures which have a satisfactory cost-benefit ratio. The usefulness



of the proposed tax is therefore open to question, given its limited ecological impact, its economic cost, the fact that it will not bring about a reduction in the overall level of greenhouse gas emissions, and the abovementioned uncertainty on the part of scientists.

### 3. *Lack of consistency and miscellaneous difficulties*

- Finally, the Committee points out that *the Proposal for a Directive is inconsistent; its implementation would give rise to serious technical difficulties and there is a real risk that it would trigger an increase in mandatory taxes:*
- *the inconsistency* is caused by the dual base of the proposed tax, i.e. on CO<sub>2</sub> emissions and energy as such. This has led the Commission to propose taxing forms of energy which are 'clean' as regards greenhouse gas emissions (nuclear energy, hydro-electric energy). This approach is not only inconsistent in itself but will also constrain switches from one energy source to another by energy generators and consumers, which would represent a further inconsistency.

- The *application of the principle of tax neutrality* will undoubtedly run into serious administrative problems, unless the principle is applied at an essentially macro-economic level. Distortions in intra-Community competition, which will very probably occur as a result of the fact that, under the Proposal, Member States are to be responsible for ensuring tax neutrality, will doubtless constitute the most serious problem.
- Given the current background of serious and sometimes critical budgetary difficulties, it is to be feared that the proposed tax may in the final analysis simply provide *a welcome opportunity to increase budgetary revenue*. If this were the case there would be a new increase in the level of mandatory taxes of about 1 percentage point of GDP, once the tax is fully operational, even though the level of mandatory taxes in the EC is already too high."

#### *Result of the vote by name*

For:	56
Against:	83
Abstentions:	3

The following members, present or represented, voted for the proposed amendment  
(Counter-Opinion):

Mr. ARENA	Mr GIACOMELLI	Mr PEARSON
Mr ASPINALL	Mr GIESECKE	Mr PELLETIER Ch.
Mr BAGLIANO	Mr GREEN	Mr PELLETIER R.
Mr BEALE	Mrs GUILLAUME	Mr PERRIN-PELLETIER
Mr BELL	Mr KAARIS	Mr PETERSEN
Mr BELTRAMI	Mr KAFKA	Mr PRICOLO
Mr BERNABEI	Mr KAZAZIS	Mr PROUMENS
Mr BLACK	Mr LAUR	Mrs ROBINSON
Mrs BREDIMA-SAVOPOULOU	Mr LITTLE	Mr ROMOLI
Mr CEYRAC	Mr LÖW	Mr SAUWENS
Mr CHEVALIER	Mr LYONS	Mr SCHADE-POULSEN
Mr CONNELLAN	Mr MERCE JUSTE	Mr SCHLEYEK
Mr DELOROZOY	Mr MEYER-HORN	Mr SCHNIEDERS
Mr DONCK	Mr MOBBS	Mr SOLARI
Mr FRERICHS	Mr MORIZE	Mr STECHER NAVARRA
Mr GAFO FERNANDEZ	Mr NOORDWAL	Mr TESORO OLIVER
Mr GARDNER	Mr OVIDE ETIENNE	Mr WHITWORTH
Mr GERMOZZI	Mr PANERO FLOREZ	Mr WICK
Mr GHIGONIS	Mr PARDON	

The following members, present or represented, voted against the proposed amendment  
(Counter-Opinion):

Mr ABEJON RESA	Mr GEUENICH	Mr NIELSEN P.
Mr AMATO	Mr GIATRAS	Mr NIERHAUS
Mr BLESER	Mr GOMEZ MARTINEZ	Mr PELLARINI
Mr BOISSEREE	Mrs GREDAL	Mr PETROPOULOS
Mr BORDES-PAGES	Mr GROBEN	Mr PIETTE
Mr BRIESCH	Mr HAGEN	Mr POMPEN
Mr Vasco CAL	Mr HILKENS	Mr QUEVEDO ROJO
Mr CARROLL	Mr JANSSEN	Mrs RANGONI MACHIAVELLI
Mrs CASSINA	Mr JENKINS	Mr REA
Mr CEBALLO HERRERO	Mr de KNEGT	Ms ROSEINGRAVE
Mr CHRISTIE	Mr KORFIATIS	Mrs SANTIAGO
Mr COLOMBO	Mr LACA MARTIN	Mr SANTILLAN CABEZA
Mr DECAILLON	Mr LAPPAS	Mr SANTOS
Mr von der DECKEN	Mr LARSEN	Mr SCHMIDT
Mr DIAPOULIS	Mr LIVERANI	Mr SCHMITZ
Mr van DIJK	Mr LUSTENHOUWER	Mr von SCHWERIN
Mr DOUVIS	Miss MADDOCKS	Mr SEQUEIRA
Mr DRAJER	Mr MANTOVANI	Mr SILVA
Mr DRILLEAUD	Mr MARGALEF MASIA	Mr SMITH
Mr DUNKEL	Mr MASUCCI	Mr SPYROUDIS
Mrs ELSTNER	Mr MAYAYO BELLO	Mr STRAUSS
Mrs ENGELEN-KEFER	Mr MERCIER	Mr TIXIER
Mr ETTY	Mr MOLINA VALLEJO	Mr VELASCO MANCEBO
Mr EULEN	Mr MORELAND	Mr VERBOVEN
Mr FLUM	Mr MORRIS	Mr WAGENMANS
Mr FORGAS I CABRERA	Mr MOURGUES	Mr WALDACK
Mr FRANDI	Mr MUÑIZ GUARDADO	Mr ZUFIAUR NARVAIZA
Mr FREEMAN	Mr NIELSEN B.	

The following members, present or represented, abstained in the vote:

Mr ATAÍDE FERREIRA
Mr BERNIS
Mr PAVLOPOULOS

**European Communities - Economic and Social Committee**

**CO<sub>2</sub> and other greenhouse gas emissions**

1993 - 29 pages

DE, EN, FR

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The problem of global warming caused by greenhouse gases, over 60% of which is accounted for by CO<sub>2</sub> emissions from fossil fuels, concerns the entire planet and necessitates urgent remedial action. As part of its contribution to that action the European Community is working on four major initiatives on each of which the ESC has given its Opinion. These Opinions are published together in this brochure.

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