

COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMUNICATION FROM THE COMMISSION

**A COMMUNITY STRATEGY TO LIMIT CARBON DIOXIDE EMISSIONS
AND TO IMPROVE ENERGY EFFICIENCY**

GENERAL PRESENTATION : OBJECTIVES AND COMPONENTS OF THE COMMUNITY STRATEGY

THE PROBLEM

1. Emissions of carbon dioxide (CO₂), which come primarily from the use of fossil fuels, were recognized as the principal cause of global warming, since they account for 61% of greenhouse gases. The considerable risks which could result from this for the planet were identified by the Intergovernmental Panel on Climate Change (IPCC), which presented a first report in 1990. A modification of overall climatic equilibrium would have an impact on ecosystems, on the habitats and on species. By a rise in the level of seas and oceans, by the changes in rainfall patterns or by the increase in climatic instability, the greenhouse effect would affect the availability of water reserves, crop yields, erosion and desertification processes... It would therefore have a direct impact on numerous human activities with important social and economic consequences. The negative impact would particularly affect countries already affected by lack of development.

2. The importance of the potential risks for humanity of the greenhouse effect, as well as the very long lead-times necessary to reverse the tendencies with regard to the emissions which are the cause of it, or to neutralise its impact, make the rapid implementation of tangible and effective action essential. It must be avoided at all costs that in the management of the environment and of the use of the natural resources a short-sighted attitude should irreversibly affect the "natural capital" which we have inherited, to the detriment of our children and of the generations to come.

3. At present, it is the industrialised world which is mainly responsible for CO₂ emissions. The share of the Community in world emissions is 13%, that of the USA 23% and Japan 5%. Central and Eastern European countries and the CIS contribute to the extent of 25%. The developing countries, whose contribution has remained small until now, is expected nevertheless to experience the most rapid increase during the years to come. It is therefore necessary that all countries, developed or not, take part in the effort to control CO₂ emissions. On the basis of emissions in tonnes of carbon per capita, the Community and Japan (2.4 tonnes of carbon per capita) are distinctly better performers than the Central and Eastern European countries and the CIS (3.63) and, moreover, than the USA (5.4). Community per capita emission levels are nevertheless twice the world average (1.13). As the foremost

economic and commercial power, the Community ought, then, to recognise its responsibilities and continue to lead by example in order to bring on board, through common efforts, both industrialised and developing countries.

THE OBJECTIVE

4. The Community has already decided to stabilise its emissions at their 1990 level by the year 2000⁽¹⁾. All the developed countries seem ready now to follow the lead of the Community in this respect. It is important, on the eve of the United Nations Conference on the Environment and Development (UNCED), that the Community as well as all developed countries take the measures necessary to respect this commitment; they have, moreover, to be ready to give to the developing countries the financial and technological aid which they need to take the same measures without harming their development prospects.

THE MEANS

5. To stabilise CO₂ emissions within the necessary time, a reduction in the energy demand is required as well as an increase in energy efficiency and a modification of the energy sources used. This objective involves therefore all households and companies and can only be achieved effectively by stimulating technological as well as transport and energy infrastructure development at the same time and by changes in behaviour. The measures which make up the Community strategy, as outlined in the Commission working paper of December 1990 and subsequently in a more elaborate form in the Communication of the Commission of 14.10.1991,⁽¹⁾ answer this need.
6. As regards technology and infrastructure, a number of initiatives (research and development, in particular the JOULE programme; THERMIE, SAVE and ALTENER programmes; green paper concerning the impact of transport on the environment⁽²⁾) aim to encourage the development of non-polluting alternative energy resources, to strengthen energy efficiency of industrialised domestic facilities, to promote transport infrastructures respectful of the environment as well as to optimise techniques concerning conservation and energy saving. As far as SAVE is concerned, the Commission herewith submits to the Council a proposal containing a series energy conservation measures concerning the energy certification of buildings, energy audits for enterprises, the real billing of energy consumption, the creation of periodical inspections of heating installations and cars, insulation of buildings and third party financing. As far as ALTENER is concerned, the Commission proposes a budget of 40 MECUs over 5 years to finance actions to promote renewable energy sources.

(1) Joint Council energy / environment of 29.10.1990

(1) SEC (91) 1744 final of 14 October 1991

(2) COM (92) 46 final

7. As regards changes in behaviour, Instruments based on market mechanisms prove the most effective in terms of results and costs. The Commission therefore transmits to the Council a draft directive inaugurating a Community carbon/energy tax. The proposal for a directive follows the main lines indicated in the Communication of October 1991. It concerns a tax which is modulated for 50% according to energy content and for 50% according to the carbon content of the used primary energy. The tax would be introduced gradually : \$3 per barrel of oil equivalent in 1993 and, during the subsequent years, an additional \$1 per year rising to \$10 in the year 2000. The tax revenue would go to the Member States. The energy component of the tax has the purpose of acting through its impact on prices as an incentive on households and companies, to a more rational use of energy. The CO₂ component aims, on the other hand, to increase the competitiveness of energy sources, in particular of renewable energy sources, which prove most favourable in view of the aim of stabilisation, and therefore to stimulate their development for both domestic and industrial uses.
8. This involves a number of complementary measures, which are likely to reinforce each other; this mutual synergy is a major element for reaching the objective in an efficient way.
9. The proposed measures, which aim initially to reduce CO₂ emissions, were conceived in order also to yield other positive consequences for the Community economy. In effect, these measures will contribute to improving energy security in the Community, to reducing the polluting emissions other than CO₂, to encouraging more effective use of transport infrastructure and developing means of transport respectful of the environment. They can also contribute to increasing the competitiveness of European industry and to endowing it with a store of products and production techniques which are not harmful to the environment, the demand for which is expanding considerably.
10. To best exploit the positive potential of the measures envisaged, while minimising temporary costs following the adjustment process, it is important that the methods of implementation of the carbon/energy take account of certain constraints. Firstly, the introduction of the new tax should not result in a net increase in the overall fiscal burden. The tax, which will be collected by the Member States and which will go towards national budgets, should be neutralised by fiscal incentives and reductions in tax and social security charges for the benefit of the companies and households concerned. In this way, the Commission proposal, which would not involve any increase in overall taxation, should result in a progressive tax adjustment, intended to increase coherence with environmental imperatives. Secondly, account will have to be taken of the impact of the measure on the competitiveness of Community companies, if competing countries other than those considered in the general conditionality clause

(see paragraph 28) do not subject their own companies to equivalent changes. In this case, the proposal foresees a tax reduction, gradual and in stages, for companies whose energy consumption, expressed as a percentage of value added, exceeds 8%, as well as the possibility of granting temporary exemptions to companies undertaking substantial efforts to improve energy efficiency or to limit CO₂ emissions.

11. All the measures proposed by the Commission are underwritten by a mechanism which ensures the monitoring of the implementation of the strategy as a whole. This mechanism will make it possible to follow up and monitor the efficiency of the measures, both in the Community and nationally. Equally, it will allow adjustments which may prove desirable or necessary, due to the economic evolution within the Community and on the international level, as well as progress made towards the stabilisation target, by making sure in particular that the required effort takes account of the economic constraints of the Member States.
12. The attached proposals allow the implementation of the strategy defined in the Communication of the Commission of October 1991. They constitute the response to the Energy/Environment Council which, in its session of 13 December 1991, asked the Commission "to put forward formal proposals for concrete measures arising from the Community strategy, including any necessary proposals for Community-wide taxation".

The fiscal and non-fiscal proposals are presented in detail in the corresponding documents. As a complement to those proposals, the Commission also investigated certain aspects, of which the main elements are developed below. They concern :

- the environmental, energy, economic and social impact of the proposed measures;
- the burden sharing between Member States;
- the envisaged reaction to cope with problems of competition the Community industry could be confronted with;
- the attitude of the Community towards the economies in development and in transition.

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ENVIRONMENTAL, ENERGY, ECONOMIC AND SOCIAL IMPACT OF THE PROPOSED MEASURES

13. The proposals submitted for adoption by the Council were conceived as a whole. As was underlined above in point 8, the efficiency of the various measures very largely depends on their reciprocal interaction. Thus, the technological component of the Community proposals will not result in the full deployment of the desired multiplier effect on national or private initiatives, without the catalyst effect and the stimulation arising from the progressive introduction of the new carbon/energy tax.
14. In addition, these proposals prove complementary to other initiatives which have already been the subject of Commission proposals. As an example, the action of the carbon/energy tax, as well as the ALTENER programme for the development of certain renewable energy sources, will prove considerably strengthened by the Commission proposal concerning the reform of the CAP⁽¹⁾ - which foresees the use of land withdrawn from production for non-food uses and which will lead to a lowering of the prices of certain agricultural raw materials which could be used to produce bio-carburants - as well as by the proposal for a Directive on excise duties on motor fuels from agricultural sources⁽²⁾.
15. Moreover, given that most proposed measures will have a gradual impact, spread out in time, the efficiency of the action in pursuit of the stabilisation target will inevitably depend on the speed with which they will actually be implemented. In view of this, the estimates of the impact of the various measures should only be considered as approximate, as the application will depend on the Council having the political will to adopt, within a reasonable time, all the measures envisaged.

a) Environmental Impact

16. According to the latest estimates, Community CO₂ emissions could increase, in the absence of new stabilisation measures, by at least 12% between 1990 and 2000. From the simulations carried out by Commission services, the proposed non-fiscal measures, if implemented in optimum conditions and in view of their educative effect for national initiatives and on companies (in particular through an accelerated introduction of the best available technologies), could contribute to reducing this increase by 5.5%, which would reduce the increase in emissions to 6.5%. This contribution would result in :

- new activities foreseen as part of the THERMIE programme, which could reduce CO₂ emissions by approximately 50 million tonnes, which accounts for 1.5%;

(1) COM (91) 379 final of 18.10.1991

(2) COM (92) 36 final of 28.02.1992

- proposals concerning the implementation of the SAVE programme, which could contribute to a reduction of approximately 3%.
- the ALTENER programme, which would reduce emissions by one additional percent.

With regard to the fiscal measures and complementary national measures, they would be required to contribute a reduction of approximately 6.5% towards the stabilisation target.

b) Energy Impact

17. As has already been underlined in the Communication of the Commission of October 1991, most of the effort with regard to the reduction of CO₂ emissions between now and the year 2000 would result from the reduction in the energy demand as well as in the improvement of energy efficiency. It is considered that achievements in this field could contribute by approximately 85% to the global stabilisation effort. As regards substitution by alternative energy sources, it is considered that for technical, economic and political reasons major results will not be achieved between now and the year 2000. In the case of renewable energy, ALTENER is expected to achieve its main effect only after the year 2000.
18. As regards other energy sources, the contribution of nuclear and hydro-electric power would remain practically unchanged. One could, on the other hand, expect a certain structural reduction in the use of solid fuels which, in the absence of the option of nuclear power, would be replaced mainly by gas. This evolution could reduce the share of solid fuels from 24% to 22% of total consumption and increase the share of gas from 18% to 22%. The part played by oil, which has suffered a certain erosion following competition from solid fuels, should, conversely, stabilise at around the current 43% level. The actual application of these developments will depend however on several factors and in particular on the taxation modalities applied to electric power, on the effective liberalisation of the market in this sector and on the regime which will actually be applied to industries with high energy consumption. It will depend equally on how much the tax, differentiated according to carbon content, will be actually reflected in the prices at consumer level.

c) Economic Impact

19. The envisaged measures will encourage a more rational use of energy and will result in important benefits for the Community economy. The benefits for the economy will be particularly significant if, as a consequence of the fiscal neutrality, the Member States would adapt their tax structure in a way which would underpin economic efficiency. The rationalisation process involves however, in the short term, adjustment costs both at macro-economic level and at the level of companies. The macro-economic impact, as regards economic activity, employment and

Inflation, will be in all probability low, on condition however, that a number of factors are taken into account. First of all, the fiscal neutrality of the tax. In fact, tax reductions can contribute to rectifying the negative impact on economic activity. Secondly, the adjustment costs will be reduced if one can exploit the capacity of market flexibility, i.e. through the introduction of the tax in a gradual and foreseeable way. In view of the effectiveness of the measures, the tax neutrality has to take into account also the envisaged stabilisation objective. In this respect, the important share of emissions growth from the transportation sector in the Community has to be taken into consideration. The implementation of concrete measures therefore has to allow a favourable treatment of this sector as far as positive incentives following the fiscal neutrality are concerned.

20. The probable impact of the tax on the various industrial sectors depends not only on the intensity of energy production in these various sectors; but also on the intensity of international trade, on the activities undertaken by our commercial competitors within the framework of their reduction strategies, as well as within the framework of the elasticity of demand to price increases. For the greater part of manufacturing industry, covering roughly 85% of industrial employment, the cost of energy accounts for only 0 to 5% of total production costs. There is however a small group of sectors, some of which are exposed to international competition, which could be potentially affected to a larger extent. The introduction of a carbon/energy tax introduced according to the principle of fiscal neutrality, could be reflected in a relatively large increase in production costs for the industrial sectors with high energy use, by a moderate increase, or even by a reduction in the production costs for other industrial sectors, and by a fairly significant reduction in the price of services. The proposal therefore foresees that companies belonging to sectors with a high level of energy consumption open to competition from countries which have not adopted a similar tax or measures with an equivalent effect could benefit from a total or partial exemption in exchange for specific agreements. Those companies could also benefit from progressive tax reductions according to the share of energy in total value added.

d) Impact on households

21. Households' purchasing power will be affected directly by the tax increase on private purchases of domestic energy and fuel, and indirectly by the effect of the tax on industrial production costs. The immediate impact of the carbon/energy tax will depend on the current structure of expenditure patterns. In this context, it is appropriate to note that the impact of a tax of \$10 per barrel of oil equivalent would account for 0.5 to 1.3% of total household expenditure.
22. The data available reveal that low-income households tend to devote a relatively higher share of their budget to the direct

purchase of domestic energy than the more well-off households. It is, however, the reverse for motor fuel. In view of these contradictory tendencies and starting from the assumption that expenditure patterns will not change, the regressive effect of the carbon/energy tax would be very small. It must nevertheless be stressed that the real impact of the tax on the various categories of households will depend on the modalities of the fiscal neutrality applied by Member States, as well as on the actual benefits following the more rational use of energy and the favourable impact of this rationalisation on the environment. It is of particular importance to take into account in the neutralisation of fiscal revenues, the situation of low income households.

THE BURDEN SHARING

23. The economic impact of the adjustment process connected with the introduction of the measures envisaged should be distributed in a relatively balanced way between Member States, with respect to the conditions indicated in paragraph 19. In a given country, low per capita emissions often reflect a relatively low economic development level. This often goes together with very high emissions per unit of energy or per unit of product (GDP). Accordingly, the improvement of energy efficiency and the rationalisation process which follows from it will have an important positive effect in these countries. Problems could only arise if the economies of the countries concerned did not have the flexibility necessary to absorb the costs imposed by the adjustment process in the short run.
24. The equilibrium between countries will depend also on the efforts decided by the Member States at the national level. In this respect, it should be stressed that most Member States whose per capita CO₂ emission level is higher than the Community average, have decided to put into effect measures at the national level going beyond that which is necessary to reach the stabilisation of emissions target for the year 2000. The proposed carbon/energy tax proposal will also enable those countries to apply a rate higher than the minimum rate defined at the Community level.
25. It is difficult at this stage, however, to estimate with precision the real costs of the adjustment process in each country. These costs will be evaluated regularly by the Commission using the general monitoring mechanism as well as the specific monitoring provisions of the carbon/energy tax. If these evaluations reveal costs which are disproportionately high in relation to the economic situation of a Member State, it would be possible, if the Member State concerned requests it, to arrange financial support through various funds or Community financial instruments, in particular, the structural funds or the Cohesion Fund. In addition, under exceptional conditions, the Council would be able to decide unanimously to suspend the tax temporarily.

THE COMMUNITY FACED WITH ITS PRINCIPAL COMPETITORS

26. The measures proposed by the Commission, since they will not only be beneficial in reaching stabilisation but also through other benefits for the economy, will be able to improve the performance of the Community in terms of sustainable development. In particular, increasing energy efficiency is in the interest of the Community's industry. However, in view of the need to fight the phenomenon of global warming, the Community action has also to be seen as forming part of an international effort to which all countries, in particular the industrialised countries, have to contribute in an equitable way. All the industrialised countries seem henceforth ready to stabilise, between now and the year 2000, their CO₂ emissions at a 1990 level. Regarding the means to be implemented to achieve this objective, most countries of EFTA already apply or plan to apply fiscal measures. The Community will continue making every effort to ensure that the other industrial partners follow a similar path.
27. In this respect, it must be stressed that the Community does not wish to make efforts which would be in vain owing to an absence of international cooperation on the part of its principal industrial competitors. This is particularly the case when the competitive position of its industries with high energy consumption would deteriorate compared with its trading partners who contribute more than the Community to the greenhouse effect but do not make comparable efforts. The Commission proposals therefore comprise mechanisms which make it possible to prevent relocation of industrial activity. Indeed, a possible relocation in addition to the harm it would cause the economy of the Community, would by no means benefit the overall reduction of greenhouse gas emissions.
28. The fiscal proposal therefore foresees that the entry into force of the tax will depend at this stage on other OECD member countries putting in place a tax similar to the one envisaged by the Community, or measures of an equivalent financial effect. As to the more immediate competition problems which could follow from production conditions in countries other than those of the OECD, the draft directive foresees the possibility of modifications and exemptions, as mentioned in paragraph 10.

THE COMMUNITY AND THE ECONOMIES IN DEVELOPMENT AND IN TRANSITION

29. Although their CO₂ emissions have been limited until now, a rapid increase in the developing countries' share of global emissions during the years ahead is expected. It is essential that, by definite and effective action to reduce their own emissions, the industrialised countries give the lead to developing countries, if they wish them to become an integral part of the establishment of a global strategy. The industrialised countries should also contribute economically to the stabilisation

efforts of smaller countries, especially as the reduction of CO₂ emissions in these countries often proves effective and not very expensive.

30. The Community should in particular encourage, by its financial contributions, the Central and Eastern European countries and the CIS, which contributes an important part of global CO₂ emissions, to take suitable measures. These countries, owing to their recent experience, are moreover in general very sensitive to the environmental problems and are aware that the taking into account of environmental constraints proves essential to ensure that the restructuring of their economy leads to sustainable development. New possibilities could begin, in this respect, in the context of the European Energy Charter, in particular with regard to the more rational use of less polluting energy resources.

CONCLUSION

31. In conclusion, the Commission asks the Council to adopt the package of the following measures:
- a proposal for a framework directive on energy efficiency (SAVE);
 - a proposal for a decision concerning the specific actions for greater penetration of renewable energy resources (ALTENER);
 - a proposal for a directive on a combined carbon/energy tax;
 - a proposal for a decision concerning a mechanism for monitoring of Community CO₂ emissions and other greenhouse gases.

The Commission, moreover, reminds the Council that the draft Council directive on excise duties on motor fuels from agricultural sources⁽¹⁾ which has already been submitted to the Council, could also contribute to a reduction of the greenhouse gas emissions

(1) COM (92) 36 of 28.3.1992