

COMMISSION OF THE EUROPEAN COMMUNITIES

COM(77) 186 final.

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COMMUNICATION FROM THE COMMISSION TO THE COUNCIL

regarding energy savings from the modernization of existing
buildings in the Community

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1. INTRODUCTION

The need to save energy is now recognized as a priority objective of energy policy both in the Community and by other major consumer countries. Despite the Rational Utilization of Energy programme and the measures adopted in the Community as early as 1974 not enough has yet been done; added to this is the shortfall of production in relation to targets caused by the slowdown in nuclear, oil and natural gas programmes.

Any strengthening of measures to save energy can only help achieve the basic objective of reducing dependence on imported energy.

Furthermore, a possible secondary effect of such action would be to stimulate economic growth through the boosting of certain forms of investment, in particular by creating a significant number of jobs in the Community, which would do something to mop up the present unemployment in Member States.

2. CONTENT AND IMPLICATIONS

The priority objective of the measures under consideration is to reduce energy consumption for space heating, putting the chief effort into the modernization of existing buildings, with a remaining useful life estimated to be not less than 20 years, on the following principles:

- insulation of walls and roofs;
- double glazing;
- improvement of inefficient heating systems; and
- fitting thermostats and meters.

"Existing buildings" means dwellings, offices and commercial premises and public buildings, but not industrial buildings.

These measures should result in a 5% reduction in total final consumption of energy, thus contributing one-third of the "15% less" target adopted by the Council of Ministers for 1985.

The estimated investment needed to implement such measures for the whole of the Community may be put at about 120 to 130.000 million e.u.a. for the planned period. It is estimated that this investment corresponds to some 300 to 350.000 jobs a year, and that the resulting direct or indirect creation of jobs amounts to some 700.000 jobs a year (see annex I).

The effects of such measures on the balance of payments, though insignificant in the first year, would become more marked thereafter, with savings of 6000 to 7000 million u.a. in 1985 (based on the present price of \$12 a barrel) and lasting the life of the buildings concerned.

In addition to the effects already mentioned, they should contribute to environmental improvement.

3. MEANS

The effective implementation of these measures requires the Member States to act to set standards and provide financial incentives. And such incentives will be needed since the return on certain modernization schemes may be insufficient in the eyes of private investors.

Member States have already introduced measures concerning the thermal insulation and heating of buildings. These should wherever possible be strengthened in all Member States and be put into effect more quickly.

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It is for Member States themselves to decide on the form of incentives (grants, credit facilities, tax deductions, etc.). However, such aids should be made subject to the provisions of the Treaty particularly on competition and free movement.

Procedures for periodical reviews and for comparisons of results with objectives should also be laid down.

4. PROPOSAL

In view of the foregoing, it is proposed that the Council adopt a Directive on energy savings from the modernization of existing buildings as follows:

- not less than 20% of public buildings by 31 December 1982;
- not less than 30% of dwellings by 31 December 1985;
- not less than 20% of commercial and office premises, not including industrial buildings, by 31 December 1985.

(1) Energy consumption within the EEC per unit of gross domestic product is estimated to have declined by about $4\frac{1}{2}\%$ in 1974, 2% in 1975, and may have remained unchanged according to the provisional estimate for 1976. A number of factors combined to bring about the decrease in 1974 and 1975 including the world recession, changes in climatic conditions and energy conservation measures. No reliable measure of the effect of energy-saving measures per se is available.

(2) The return on investment in energy-saving is a function of the cost and life-expectancy of the house, the amount of the investment, the appropriate rate of interest, the extent to which energy is saved and the cost of fuel.

The considerable diversity of the building structures in existence, however, and the variety of their remaining life-spans, etc. means that the effectiveness of energy-saving measures is liable to vary significantly from one building to another and that some conservation measures will not be operational at all in certain categories of buildings.

Studies on the cost effectiveness of various energy-saving measures have been carried out for individual countries and under certain conditions the payoff period for investment in roof insulation could be little as 2 to 3 years while that for double glazing could be 8 to 10 years and longer.

The effectiveness of energy-saving measures can vary considerably depending on the type of building involved but some studies would indicate that for an average semi-detached dwelling house approximately 60 per cent of the heat loss is through the external walls, the roof and the floor. The remainder of the heat loss is, very roughly speaking, divided between the ventilation and the window glazing.

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(3) In the case of some rented housing it is customary for the landlord to fix rent charges exclusive of heating charges. Heating charges are then calculated on the basis of the overall consumption in the building and not on the basis of individual consumption. Should the owner undertake any additional investment with respect to the heating equipment, he may not be in a position to recover his outlay from the tenants.

On the other hand, the tenant has no interest in undertaking the investment so long as heating charges are not calculated on the basis of his personal consumption and unless he is sure of a very lengthy fixity of tenure on his rent contract.

(4) The calculation of the amount of investment involved on a Community-wide basis in energy-conservation measures is based on the following rough estimates and hypotheses:

(i) The total stock of dwelling houses in the Community is estimated at over 90 million. It is assumed that as a result of the programme some 30% of these will be modernized.

(ii) Average investment outlay per fully modernized dwelling is estimated at 2,000 EUA.

(iii) The number of private and public office buildings, hotels, schools, hospitals etc. to be modernized has been very roughly estimated at around 3.6 million which represents 20 per cent of the stock.

(iv) Average investment outlay per office and other tertiary sector building is estimated at 20,000 EUA.

The total estimated outlay is therefore as follows:

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Milliard EUA

27 million dwellings
with average outlay of
2,000 EUA

54

3.6 million office and other
buildings with average outlay
of 20,000 EUA per building

72

126 milliard EUA

This is to be spent over the 7 year period of the programme, at constant prices.

- (5) It is likely that the employment content of the extra activity generated by the proposed programme would vary significantly between the various types of modernization undertaken. For example, some of the work might be undertaken by the owners themselves, some by unskilled workmen and some by skilled workmen. The effects on employment in the industries supplying the materials would also vary.

In view of the difficulty involved in obtaining precise information on a Community basis only a rough approximation has been possible based on information received from industrial federations. The cost of completely modernisation, an average house is estimated to be around 2,000 EUA and to involve 8 man days of work. The estimated cost figure is likely to be exceeded in some countries or regions and may well be somewhat above this in others. Given that it takes 250 EUA on average to employ one worker per day and taking an average work year as equal to 220 days, the total job creation over the seven year programme for an expenditure of 126 milliard EUA is 2.3 million man years. On average, this would mean about 330,000 jobs per annum.

On the basis of the empirical study carried out in Sweden and reported in the OECD paper (1), a figure for total direct and indirect employment generated by the programme of some 700,000 ^{jobs} per annum appears justified as a likely order of magnitude. However in view of the numerous qualifications which have had to be made in

(1) "Employment Effects of Environmental policies: Review of the Swedish Experience with Subsidisation of Emission Control Investment"
OECD, Paris, 22 March 1976. pp. 17-18.

calculating this result it should be treated more as general indication of magnitude than as a precise estimate.

Proposal for a
Council directive on energy savings from the modernization
of existing buildings in the Community

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community, and in particular Article 103 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

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

Whereas the continuation of a high degree of dependence on energy imported from third countries, in particular because Community production has fallen short of forecasts in the nuclear, oil and natural gas sectors, may cause supply difficulties for the Community;

Whereas the Council, in its Resolution of 17 December 1974 concerning the 1985 objectives for the Community energy policy, approved the objective of reducing the rate of growth in energy consumption for the Community as a whole in such a way as to achieve in 1985 a level of consumption 15% below the forecasts made in January 1973;

Whereas, despite the Community action programme for the rational utilisation of energy, to which the Council gave agreement in its Resolution of 17 December 1974, what has been done until now does not appear such that the objective set for 1985 can be attained;

Whereas the modernization of existing buildings in the Community, in particular by means of better insulation of walls and roofs, double glazing, the improvement of heating systems and the use of thermostats and meters, could contribute one-third of the objective of a 15% reduction in total final energy consumption in 1985;

Whereas the execution of such measures could also create directly or indirectly a significant number of new jobs, mopping up some of the present unemployment in the Community, could have a favourable effect on balances of payments and help to conserve the environment;

Whereas Member States must adopt programmes to this end;

Whereas the Commission must be informed of these programmes and of progress in carrying them out and report on them to the Council and the European Parliament,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Member States shall adopt measures in view of / the modernization of existing buildings which, on the date upon which this Directive takes effect, have an estimated remaining life of not less than 20 years. They shall include in particular better insulation of walls and roofs, double glazing, the improvement of heating systems and the use of thermostats and meters.

These measures shall affect:

- not less than 20% of existing public buildings not later than 31 December 1982;
- not less than 30% of existing homes not later than 31 December 1985;
- not less than 20% of commercial and office premises, not including industrial buildings, not later than 31 December 1985.

Article 2

Member States shall draw up programmes in accordance with Article 1 and shall notify them to the Commission not later than 1 July 1978.

This notification shall specify all measures which Member States propose to take, in particular technical standards and time-limits and other detailed rules for their implementation, and their geographical variations if any, and financial incentives. These measures shall not be incompatible with the provisions of the Treaty, in particular those relating to free movement and competition.

Article 3

The Commission, after consulting Member States, shall report to the Council within six months of the notification of their programmes and shall express an opinion on the contribution of these programmes to the attainment of the objective of a 15% reduction in total final consumption of energy in 1985.

The Member States shall periodically inform the Commission of progress with the implementation of their programmes. The Commission shall report to the Council and to the European Parliament and shall deliver any opinions or recommendations on this subject after consulting the Energy Committee.

Article 4

Member States shall bring the laws, regulations and administrative provisions necessary for the implementation of this Directive into force not later than 1 July 1979.

Article 5

This Directive is addressed to Member States.

Done at Brussels,

For the Council

The President