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INVESTMENT IN THE RATIONAL USE OF ENERGY

(Communication from the Commission to the Council)

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Introduction

In the Foreword to the Fifth Medium-Term Economic Policy Programme[1] and in its recent Communications on the development of strategies for energy and industry in the Community[2], the Commission stresses the need for the Community and the Member States to ensure that investment in energy, and in particular investment in the rational use of energy[3], proceeds at a fast pace and a high level.

This Communication, which is the end-product of a detailed study by the Commission's departments in the Member States of policies in this sphere, and follows on from a number of studies[4] and Communications[5]:

(i) stresses the key role of investment in the rational use of energy in a strategy for energy and industry;

(ii) provides information on the Member States' policies in this sphere;

(iii) analyses the difficulties and obstacles encountered in implementing these policies;

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(1) Draft of the Fifth Medium-Term Economic Policy Programme (COM(81)344 final).

(2) The Development of an Energy Strategy for the Community (COM(81)540 final).
A Community Strategy to Develop Europe's Industry (COM(81)639 final/2).

(3) "Investment in the rational use of energy" means investment which makes it possible to save energy in such a way as to obtain the highest possible efficiency in the use of all forms of energy, and/or to use primary energy sources more effectively, and to encourage the process of substituting other forms of energy for oil under satisfactory economic conditions.

(4) In particular, Investment and Employment in an Energy-Efficient Society, April 1981.

(5) Energy Pricing - Policy and Transparency (COM(81)539 final).
Taxation of Petroleum Products (COM(81)511 final).

(iv) propose a series of measures likely to increase the effectiveness of the resources deployed by the Member States to encourage this type of investment by exploiting the advantages and facilities which the scale of the Community can provide.

I. The Key Role of Investment in the Rational Use of Energy in a Strategy for Energy and Industry

(1) In spite of a big reduction in energy demand and an increase in energy production, particularly nuclear-based energy, in the Community in the last few years[1], the latter's economic activities are still heavily burdened by dependence on costly oil imports, a factor which is accentuated by the accompanying uncertainty with regard to supplies, prices and exchange rates.[2]

(2) Whereas for a time after the oil crisis of 1973/74 it was thought that the Community had the time to make the necessary structural adjustments to adapt to the new conditions in the energy market, events in 1979 and 1980 modified this view as the underlying trends in the oil market seemed to have changed radically. OPEC production in the 1980s does not seem likely to exceed a certain ceiling and the world market has lost some of its flexibility.

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(1) In 1981 there was a drop of 4.6% in energy consumption.

(2) The Community remains the world's biggest net importer of oil (438 million toe in 1980, as compared with the 337 million toe imported by the United States and the 251 million toe imported by Japan. Net oil imports for 1981 amounted to 366 million toe). The Community's oil bill is some 100 billion dollars. What is more, since 1979 in relative terms the Gulf States and Saudi Arabia have been supplying much more oil to the Community than they did previously.

A revival, however small, in the economic activity of the industrialised countries, combined with an increase in the demand for oil in the rest of the world, can in the end only make the oil market even less flexible[1]. Energy policies must therefore be designed to promote the rapid structural adjustment required to ensure effective demand management. Adjustments of this type can be achieved only by significant investment in the national use of energy.

(3) As emphasised in the Fifth Medium-Term Economic Policy Programme, estimates of the overall level of effort required can only be tentative. Provisional estimates on the basis of a limited Commission inquiry in 1980 suggest that the total of national programmes at present for the period 1981-90 is some 500 billion Ecu, of which 80% is for energy production and 20% for measures to increase energy efficiency. These programmes would represent some 2% of the gross domestic product (of which 0.4% would be set aside for investment in the rational use of energy) as compared with about 1.5% in the last decade, or about 9% of total investment compared with 6.8%. Although some countries' efforts in this field are already ambitious, the overall level of energy investment is no higher than in the 1960s.[2]

(4) It is therefore essential not only that the programmes aimed at promoting the rational use of energy should be carried out in their entirety, but also that some of them should be expanded. The Table in Annex 1 indicates what the Commission regards as reasonably ambitious objectives for the Community and the Member States based on information gathered during a recent survey of the Member States' programmes, which showed that some of them had already achieved a fairly high level of investment (Federal Republic of Germany), that others were

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(1) See in this connection the OECD publication Energy Conservation: the Role of Demand Management in the Eighties.

(2) Fifth Medium-Term Economic Policy Programme (COM(81)344 final).

working on ambitious programmes (France, Netherlands and Denmark in particular), that others, with abundant resources, attached less importance to making rapid progress in improving energy efficiency (United Kingdom) and that others were late in taking steps to achieve an adequate level of investment. The Annex shows that the probable investment for 1980 is some 7 to 8 billion units of account - which is less than the amount forecast. The figure of 19 billion Ecu given for 1985 results partly from national programmes (France, Denmark) and partly from studies made in the Member States. If actually achieved, this figure would represent significant progress. The Commission feels that it should be regarded as an objective to be achieved. A further objective, for the end of the decade, could be set at some 25 billion Ecu, i.e. about 3 times the 1980 level.

(5) In earlier Communications the Commission recalled the advantages that an effort of this type would have for economic revival. In the relatively short term it would help firms, particularly the basic industries that are large energy consumers, to become more competitive internationally by ensuring greater energy efficiency. It would also make it possible to open up markets in the building industry, electrical and mechanical engineering industries, industries manufacturing measuring and monitoring instruments, in data processing and data communication and in the tertiary sector. In these sectors, all of which have a long-term future in the Community's internal and foreign markets, Europe has a technical lead and should be in a position to consolidate this. Finally, this effort will help to make a considerable contribution towards easing the strain imposed on our economies by the oil bill: any progress in the form of the more rational use of energy would therefore improve the prospects of growth and hence make a significant contribution towards making it possible to improve the employment situation.

(6) Moreover, it has been estimated that the above-mentioned efforts concerning the rational use of energy would lead directly to the creation of between 300,000 and 500,000 jobs in the Community by 1985.[1] This would also depend on whether or not national programmes in this field were coordinated and made to coincide on time.

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(1) Fifth Medium-Term Economic Policy Programme (COM(81)344 final). European Economy, No. 9, July 1981 (p. 174, 12.2.3.).

If the Member States' energy programmes are not co-ordinated, and made to coincide in time, the market for technologies which will help to produce energy savings will shrink and the economies of scale will be lost, and these alone are capable of affecting employment in the way suggested by the individual national policies for the rational use of energy.

(7) There are also other reasons for speeding up investment in the rational use of energy. For one thing, this type of investment, a certain proportion of which has a relatively short "payback time" at a low cost, complies with the rules of the financial market in periods when capital is dear. These rules should lead to a better balance between investment on the energy demand side and that on the supply side, which is costly overall and has long payback periods. It should also be noted that ultimately, through conversion to alternatives to oil, there will be new opportunities for investment on the supply side. Investment in the rational use of energy[1] is therefore an important complement to investment on the supply side.

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(1) Supply-side investment will not be covered in this paper. Significant efforts in this sphere have been made - with some projects already completed and others still under way - and it would seem that priority should now be given to ensuring a better balance between the two sides by taking vigorous action on the demand side. Particularly in a poor economic climate, it is becoming increasingly clear that energy policies almost exclusively directed towards developing the supply side may in their turn cause difficulties. For instance, they lead users to the unfounded belief that they will very shortly have cheap energy at their disposal and the result is detrimental to energy saving; or, because of the consumption structure, such policies pay very little heed to small users - households and small and medium-sized firms. What is more, the effects on employment of investment in the rational use of energy - which are often more marked than the effects which result from expanding supply and which result in a quicker return on borrowed funds at less cost - explain why the Commission hopes for the establishment of a better balance between supply-side and demand-side. A better balance should benefit both the Community at large and the two sectors concerned whose interests, in the final analysis, are similar. In future Communications - on coal and nuclear energy - the Commission will be going into the question of the improvements which can be made in investments on the energy supply side.

The Commission also considers that investment in the rational use of energy is least likely to fuel inflation. As already indicated, it will ultimately reduce production costs and hence the cash-flow problems which firms are finding so burdensome. Ultimately, therefore, this investment is likely to ease the tension concerning prices and balance-of-payments problems. If they are to succeed, counter-inflation policies and policies for a healthy economic revival cannot afford to ignore a type of investment which is a pre-condition for mastering the considerable economic handicap of energy imports.

Finally, an effort to promote this form of investment is one way of enabling firms and households to react faster to market signals. There is no real danger of an excessive increase in public sector borrowing requirements. The risk would be greater if alternatives to oil did not penetrate the market sufficiently quickly. Therefore, as a necessary stimulent to economic activity it represents one of the basic factors in a sustained economic recovery on the basis of which we may hope for a return to acceptable levels of employment.

(8) A policy to promote investment in the rational use of energy must therefore be regarded as an essential instrument of economic policy. It is all the more important as, during a period of reduced activity, this type of investment may make a substantial contribution to the level of activity and to employment, particularly if a concerted effort is made. But the Community cannot afford either to lose two or three years after every energy crisis or to miss the opportunity offered by the present slackness of the world oil market. The type of investment in question is perceived differently depending on whether the individual or the general interest is considered and, although most of the projects in this field would appear to pay off in the short term, the overall level of investment is unsatisfactory. Public authorities must therefore use all the means at their disposal - including budget and financial resources - in order to ensure that

the requisite effort is made, particularly as to subject investment in the rational use of energy strictly to the restrictions of short and medium-term economic policy would be to run the risk of helping to launch the economy into a viscious downward spiral.

II. Member States' Policies and Measures Introduced

(9) The policies and main measures that the Member States have adopted to expand investment in the rational use of energy are listed below by major sectors of the economy. This breakdown is based on the survey conducted by the Commission in, and with the cooperation of, the Member States and on studies carried out by the Member States and the Commission.[1] It does not set out to be exhaustive, as its only aim is to help the reader assess the situation in certain sectors of the economy so that useful and specific proposals can then be made. The sectors concerned are:

(i) industry, and in particular the industries that are large energy consumers;

(ii) infrastructure;

(iii) buildings;

(iv) transport.

(10) Nevertheless, we should first remember that in December 1980 the Commission sent the Council a list of measures adopted before May 1980 to promote energy savings in the Member States.[2] This paper will shortly be brought up to date and the measures taken with the aim of promoting alternatives to oil will be added. However, in its present

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(1) In particular Investment and Employment in an Energy-Efficient Society most of the conclusions of which support those of the survey carried out by the Commission.

(2) Member States' Energy Saving Programmes: Situation May 1980 (COM(80)899 final).

form it is still a useful document. It shows that by the beginning of this decade, seven years after the first oil crisis, most of the Member States had introduced the basic energy-saving programme that they had committed themselves to adopting in the Council Resolution of 9 June 1980.[1] There are still many serious gaps - particularly in the programmes for Belgium, Italy, and Luxembourg.

(i) Industry, and in particular the industries that are large energy consumers

(11) It comes as a surprise to see that there are still many projects which could be carried out in industry with a payback period of as little as two years. A combination of measures aimed at improving the training of energy management specialists, bringing about the more vigorous programming of the use of energy and making relatively inexpensive technological improvements would, for many firms yield savings of at least 20 to 30% of their present consumption. Conversion to installations using fuels other than oil and gas is slow, and this applies particularly to small and medium-sized firms. In industry as a whole the current rate of investment directly attributable to the increase in energy prices would seem to be some 5% of total investment. Only Denmark quotes an average as high as 10% for industry as a whole. But Denmark is the only country which is rapidly converting to coal (Annex 2). In Germany in 1980 there were also certain signs that the rational use of energy was being speeded up; these signs persisted in 1981.

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(1) OJ C 149 of 18 June 1980; Council Resolution concerning Community Energy Policy Objectives for 1990 and Convergence of the Policies of the Member States.

It should also be noted that most Member States have a marked preference for general measures to speed up investment in industry as against specific measures for investment in the rational use of energy. But there are exceptions to this general rule. Examples are special depreciation allowances (Belgium, France, Germany), a system of interest rate rebates on loans to small and medium-sized firms (Germany) and financial support arrangements for conversion to coal in France, the United Kingdom and Denmark. France has also taken measures to promote the large-scale development of the acquisition of equipment by industry by means of leasing. Some Member States make technical consultation services over and above the establishment of energy balances available to small and medium-sized firms. Finally, almost all the Member States offer grants for research, development and demonstration.

(12) The position of the industries that are large energy consumers differs from that of industry as a whole. It is here that most of the low-cost, quick-return investment has been made. But it would seem that a worthwhile potential for investment - albeit no more than 5 to 10% of consumption - remains. Taken as a whole, however, big projects implying changes in processes or the massive introduction of coal for heat and power production, as well as major oil or energy savings, have yet to get off the ground, even though they offer the prospect of returns within a reasonable period (three to seven years). Conversion to coal in the cement industry is the one exception - and only a partial exception at that - to the rule. Progress in coal conversion should be particularly significant for countries such as the Netherlands (Annex 2) where rapid expansion in the chemicals and oil-refining sectors during the last decade - by contrast with the decline experienced almost everywhere else - has considerably increased energy requirements per unit of value added.

(ii) Infrastructure

(13) Where energy infrastructure is concerned, the situation varies considerably from country to country. District heating is generally regarded as requiring a great deal of capital and long-term investment. Prospects for new large-scale investment would seem to exist mainly in Germany and, in the medium term, in Belgium and Northern Italy. According to the forecasts, and taking into account the projects - including some major ones - already completed, there are further prospects in Denmark, France, the Netherlands and the United Kingdom. The need to invest in port facilities to cope with coal is becoming apparent in various places in Denmark, France, Greece, Ireland, Italy and the Netherlands.

It should also be noted that Denmark, Ireland and Italy in particular have made use of the Community's borrowing facilities, particularly to support infrastructure investment, importing and transporting coal and developing district heating. At the time of writing, a 3% interest rate rebate may be granted through the European Monetary System to certain projects in Ireland and Italy.

(iii) Buildings

(14) It is generally accepted that the long-term potential for improving energy efficiency in buildings, whether old or new, is particularly great. The potential for inexpensive - or even free energy savings - is probably at least 10% of the sector's present consumption. Relatively costly renovation of buildings could bring about 15 to 20% of additional energy savings during this decade and have a fairly significant effect on employment in a depressed industry. Nevertheless, there are quite striking contrasts between the various building renovation rates (Annex 2). The contrasts reflect the number of buildings renovated each year as well as the average expenditure per renovation related to the rational use of energy. The most ambitious programmes are those in Denmark, the Netherlands and particularly Germany. Next in line, but far behind the

former, are France and the United Kingdom. The Commission has no data for the remaining Member States but there is reason to believe that the renovation rate is extremely low. The above-mentioned contrasts are closely related to the amount of support provided by the public sector budget (Annex 3). The evidence is that generous support, a high renovation rate and high average expenditure per renovation are related (Annex 4).

In addition, some Member States have taken steps to make improvements in the vocational training of those engaged in the occupations and trades concerned, and to increase the economic return from the public funds set aside for investment in this sector. Many aid programmes now include funds for improving heating systems. For instance, heat pumps and water-heating systems using solar energy are grant-aided in France and Germany, as are water-heating systems using solar energy received in Italy. Large subsidies for district heating are granted in Denmark and Germany and, to a lesser extent, in the Netherlands and France (mainly geothermal energy).

(iv) Transport

(15) Some 25% of the petroleum products consumed in the Community are used in the transport sector, which depends on these products for 97% of its requirements. Half of the oil consumed in this sector is used in road transport, 30% in shipping,[1] 10% in aviation and the rest in rail and inland-waterway transport. Significant energy savings could be made in each mode of transport by changing user behaviour, applying technological advances, altering the modal split and adapting the infrastructure.

However, this potential has so far been exploited to only a very small extent. In the case of the railways, for example, it is estimated that technological advances could bring about savings of around 30% for high-speed passenger trains and 10 to 20% for freight carried in whole wagonloads. It is estimated that savings of as much as 50% could be made in seaborne shipping by 1990.

There are three main reasons why the results obtained so far are inadequate:

(1) This percentage has been calculated on the basis of the consumption of ships flying Member States' flags in world shipping and relates to the proportion concerning the supply of fuel in Community ports (1979 figures).

- the lack of an overall picture regarding the development of the transport sector as a whole;
- the forces of inertia affecting a large proportion of this sector, and
- investment which is still insufficiently in tune with RUE objectives.

Investment based on existing technologies is, to be sure, now being ploughed into the motor industry (more fuel-efficient engines, more streamlined bodywork and the promotion of diesel engines). Motor manufacturers have set themselves the objective of making savings of between 5 to 10% for new vehicles by 1985.

Where air transport is concerned, efforts are being made to reduce consumption per seat-km by introducing new engines and new airframe designs.

However, all these measures are one-off initiatives and not part of an overall plan.

Where the common organisation of the transport market is concerned, no significant improvement has been made in the allocation of passenger and goods traffic to modes and forms of transport which are more fuel-efficient or can use alternative energy sources. For example, the railways' share of the modal split where inland transport is concerned has declined over the last decade.

The same applies to the split between public (rail or road) transport and private individual transport in urban areas, this being largely dependent on the progress that it has been possible to make concerning the movement and operation of public transport. In addition, the amount of energy wasted as a result of traffic jams in urban areas could be reduced by means of better traffic management (synchronised traffic lights, etc.).

Progress in this connection depends to some extent on specific investment. Lastly, only marginal progress has been made towards finding alternative energy sources capable of reducing the transport sector's dependence on oil, although specific research projects (in particular COST projects) have been undertaken on the subject of electric vehicles, dual-mode trolleybuses and alternative motor fuels.

In particular, it should be mentioned that there is considerable, widespread interest in synthetic fuels, but the prospects of their use in the present circumstances are still limited.

Proposals in this connection will be submitted in forthcoming Commission Communications.

(16) The annexed tables are intended to supplement this brief sketch of the main sectors of the economy involved.

Annex 2 gives quantitative data on the projects carried out in each Member State.

Annex 3 shows the relationship between investment in the rational use of energy, the economy as a whole and the public sector budget in particular. It is worth noting how much is already being invested in the rational use of energy in some Member States as compared with their investment in the energy sector as a whole. In these Member States, support from the public sector budget amounts to 20% or more of the amount invested in the rational use of energy, but this is still fairly low compared with the proportion of the budget set aside for energy policy, and a drop in the ocean when compared with total budget expenditure.

Annex 4 gives more details on public sector support for investment in housing renovation. In a few Member States support of this type exceeds 1,000 ECU per renovation.

Annex 5 gives a breakdown of the volume of energy consumed and the actual and potential energy savings for each Member State and each sector.

When conducting the survey, the Commission's departments were struck by the absence of systematic monitoring in any Member State of the results of the policies introduced with a view to saving energy or substituting other fuels for oil.

III. Difficulties and Obstacles

(17) An analysis of the main sectors involved and the measures already taken by the Member States shows that there are several categories of difficulty and obstacle in the way of investment and that they vary in degree depending on the specific (economic, energy, institutional and social) situation of each Member State.

These difficulties and obstacles stem from the general political, economic, financial and decision-making climate in which investment decisions are made and from the problems specific to certain sectors of energy use.

1. Difficulties and obstacles resulting from the general context in which decisions to invest in the rational use of energy are taken

(18) Inadequate price-related incentives and the uncertainties affecting the trend in the relative prices of the various forms of energy

In a recent Communication,[1] the Commission drew attention to the central role of pricing policy. "A consistent and rational approach to energy pricing is one of the main components of policy in the achievement of the aims which the Community has set itself in the field of energy supply and demand. It should, in particular, assist the process of macro-economic adjustment to higher prices for imported oil, permit an adequate stimulus to investment, encourage energy efficiency and contribute to the transition from oil to other forms of energy". But the ability of the market to react to a pricing policy[2] is hampered by the sluggish economic climate and in some cases by the divergence between the short-term interest of the private investor, households or industry, and the general interest. The private investor - who is all too often forced to seek a maximum return over a short period and faced with complex difficulties - is not only given an inadequate incentive to make better use of energy but does not always have a clear idea of the benefit to be gained.

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(1) "Energy Pricing - Policy and Transparency" (COM(81)539 final).

(2) It should also be borne in mind that the incentive to invest in the rational use of energy will not come from increasing the price of energy above the levels set by the world markets. Such a step could be economically and politically damaging in that it would make it even more necessary to provide supplementary benefits to the poorest families, which are already a burden on the national or local authorities in many Member States. It would also accelerate the rate at which plant and equipment becomes obsolescent in industries which are already having to contend with major new investment. Furthermore, as far as the user is concerned, higher prices are often synonymous with restrictions and a qualitative decline in the services he expects (smaller cars, smaller areas heated, etc.) when the aim should be to maintain the same services but with a lower consumption of energy.

In addition, governments' commitment to a lower level of dependence, improved utilisation of energy and incentives to investment has in some cases been hesitant and vacillating. This reluctance to invest in the rational use of energy on a large scale is further aggravated by the uncertainty characterising the medium- and long-term trend in the relative prices of the various sources of energy and in taxation policies.[1] This has resulted in a "wait and see" attitude strengthened by the feeling of economic insecurity which has prompted business leaders to slow down their investment programme; opinion polls conducted in industry and among individuals corroborate this finding. They reveal the absence of any clear perception of the forces which determine the formation of, and trend in, energy prices with a result that all energy investment initiatives are deferred.

(19) Lack of adequate training and information of certain economic operators

A sustained effort should be made to remedy the deficiencies sometimes apparent in the training and information of certain economic operators. There is insufficient awareness of the options available - particularly in the medium term - for investment in the rational use of energy, of the technical and financial arrangements and of the public and private benefits; this is particularly true of the private individuals and small and medium-sized firms. These two categories frequently lack the knowledge and requisite skills not only to draw up their own energy balance (which is often the case) but also to see a project through from beginning to end. Even the major energy-consuming industries do not avail themselves of all the possibilities offered by better training and management. Significant energy savings can often be made in industry if relatively modest sums are spent on training and on the introduction of new management systems. Generally speaking, efforts should be directed towards making the new systems of measurement, control and management acceptable at the work-place and in households, and an overall conception of the production process - embracing the rational use of energy - should be systematically introduced in manufacturing firms.

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(1) See the Communication on the Taxation of Pétroleum Products (COM(81)511 final).

(20) Financial channels and financing arrangements which could be improved

In addition to the factors already mentioned above, a number of countries exhibit - in respect of specific categories of investor - an insufficient degree of adaptation of the type of financing currently available for investment in the rational use of energy. The financial arrangements available for major investment projects by firms or private individuals are ill-suited to small-scale projects for the rational use of energy, which generally pay off much more rapidly. Although financial agencies in some Member States have made an effort to adapt financing proposals to these requirements, it must also be said that such efforts have not been made everywhere. Annex 6 contains examples of some of the measures in force in the Community.

(21) High, unstable interest rates

High, unstable interest rates are also a major obstacle affecting investment in general and investment in the rational use of energy in particular. This applies to projects with no prospect of a rapid return involving investment which is often very beneficial in its effect on energy consumption but which necessitates major infrastructure work. This is also true of investment projects where a decision is taken by economic operators (households or small firms) who are unfamiliar with the necessarily complex financial procedures and economic calculations which are not based on nominal rates of interest but instead on actual rates which themselves vary.

In some Member States too there are still inadequate funds available for major investments.

(22) Partitioning of the market

The energy-saving industry is a recent and promising development but one which is being hampered by the problem it encounters all too frequently when new products or equipment are launched on the Community market. A wide range of models and specifications is offered in an attempt to meet the different national requirements. This vast array of models

and specifications leads to a partitioning of the markets which in turn prevents the manufacturing industry from deriving full benefit from any economies of scale. A further consequence is that the unit price of equipment is higher than the Community's potential might lead one to hope. This obstacle also weighs on the effectiveness of tax incentives to investment, the effect of which primarily depends on the benefits gained over the short term.

(23) Decision-making processes that are over-centralised

Decision-making processes that are over-centralised make it difficult to disseminate information to a wide range of decision-makers and to promote the rational use of energy especially by small and medium-sized firms and households. This is nevertheless a category of users for whom energy expenditure - although representing only a small proportion of their production costs or total budget - is still a very important potential source of energy saving. Some degree of decentralisation in the decision-making process would therefore favour investment, but this should not obscure the difficulties which might arise from an imprudent allocation of responsibilities or funds between the various centres of decision-making involved.

2. Problems specific to certain energy-using sectors

(24) High on the list of energy-using sectors which are encountering specific problems must be the many industries that are large energy consumers. These industries have been drawn into a downward spiral through the lack of own capital, inadequate cash flow and delays in introducing new technology. In some cases, the situation is extremely serious, in particular in the steel, glass, paper, chemicals, non-ferrous metals and the food industries. Throughout the Community, the chemical industry is facing difficult planning decisions regarding the supply of feedstocks

and also diminished competitive capacity in respect of a considerable proportion of its activites in Europe. Substantial investments - which often yield only long-term returns, and that at fairly high risk - must be made if feedstock materials are to be diversified, for example by using methanol from the offshore gas industry or the products obtained from coal gasification. The industries that are large energy consumers believe that their situation has worsened through the lack of investment in energy production (especially in Italy) and also as a result of energy price increases (particularly in France, the United Kingdom and Belgium).

(25) Where energy infrastructure is concerned, there are projects with a long payback period and an uncertain return. Such projects are unlikely to attract private investors, however far-sighted they may be, but are nevertheless of strategic value for the economy as a whole. The most noteworthy examples are infrastructure development projects in the coal industry although the requisite markets for coal have not yet been firmly established, projects to improve the production and distribution of coal aimed at offering a market for the waste heat from heating systems with a high energy consumption or at cutting the consumption of oil used for space heating and the production of domestic hot water.

(26) Where buildings are concerned, a number of specific points should be stressed, such as the relatively poor return on many investments made by domestic users and the divergent interests of landlords and tenants. In the public sector preference is generally given to operating expenditure rather than to capital expenditure. Consequently, less attention is being paid to the rational use of energy in public buildings.

(27) The abovementioned difficulties and obstacles, be they the result of the general economic situation or of the specific situation in particular sectors largely explain why the level of investment in the rational use of energy has remained inadequate in the Community and is far behind our main industrial competitors, i.e. the United States and Japan.

In view of these (mainly external) constraints which weigh on the Community this type of investment must be regarded as a priority. An expansion of investment and the gradual elimination of the obstacles in its path are perfectly possible provided that full use is made first of the Community's market and resources potential.

IV. Action Programme to Stimulate Investment in the Rational Use of Energy

(28) The earlier sections of this paper have explained the benefits of steady continued investment in the rational use of energy, describing approaches already adopted by Member States and examining the difficulties encountered. This last section suggests ways of trying to overcome these difficulties and obstacles. Two types of measures are suggested:

- measures to improve the general context in which decisions to invest in the rational use of energy are taken;

- measures specific to certain areas of activity.

There is a tendency to apply throughout the Community successful action previously taken by one or more Member States and to take steps at Community level to support national initiatives. It is important first of all that those taking economic decisions should have the clearest information possible on energy pricing policy. Realistic prices and a consistent and sustained policy concerning the taxation of energy products, particularly petroleum products, can do much in themselves to remove the doubts currently surrounding investment decisions and thus increase market pressure for investment.

In addition, much more should be done in many Member States and for certain types of investor to provide information, encouragement via legislation, and training in order to encourage the launching of investment programmes which offer economic benefits. At the same time, efforts should be made, once again in certain cases and for certain countries, to adjust the private financial channels so as to make them better suited to the specific requirements of this type of investment. In a few clearly-defined cases, the public institutions could intervene to make these private channels more effective; this has already been done in some Member States. However, measures of this kind could not encourage a sufficient level of investment in cases where the present high interest rates are checking demand for projects of general benefit which will pay off only after a lengthy period. In these cases, arrangements will have to be made to grant financial incentives.

1. Improving the general context in which decisions to invest in the rational use of energy are taken

(29) Reducing uncertainty concerning pricing

The two Communications recently sent by the Commission to the Council on Energy Pricing[1] and the Taxation of Petroleum Products[2] are intended to increase transparency and to rationalise the taxation of energy somewhat, in accordance with energy policy objectives. The measures proposed in these two papers should encourage a certain stability and reduce uncertainty about changes in the pricing structure and taxation of the products concerned.

Furthermore, the Community and the Member States can give additional guarantees on the stability of prices by maintaining close contact with the governments of energy-exporting countries in order to establish stable trade relations which may lead to the signing of long-term contracts.

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(1) Energy Pricing - Policy and Transparency (COM(81)539 final).

(2) Taxation of Petroleum Products (COM(81)511 final).

This applies particularly to coal, where attempts should also be made to have coal exporters keep prices relatively stable in the medium and the long term in return for guaranteed consumption levels by coal users.

These pricing, taxation and external relations measures are the main steps which can be taken by the public authorities to reduce uncertainty about prices and price trends.

Mention should also be made of the practice already adopted in the Federal Republic of Germany which consists of working out the most likely estimate by comparing studies carried out by a number of independent institutes and using them as a basis for a measure of planning in the industrial and domestic sectors. Finally, the public authorities should encourage gas and electricity companies to enter into long-term pricing commitments with industry, as has already been done in some Member States.

(30) Better training and information for certain economic operators

Direct action by Member States can play a very important part in achieving this objective which can be of particular benefit to small and medium-sized firms, but also to households. These economic operators should therefore be given easier access to reliable and cheap technical advice, not only for working out their energy balances but also for seeing a project through from its conception to its implementation. At the same time, the action already taken in this area by the Social Fund should be reinforced by putting more emphasis on training in conjunction with Community financial aids.

The Commission intends to examine the changes that should be made to Community demonstration programmes in order to include the development of software, and management and training methods in the list of projects for which aid is granted. The Commission is also endeavouring to play a more active role in this field by helping to instruct and inform the various parties affected by such matters.

(31) Improving financial channels and financing arrangements

In the present economic circumstances, the Commission considers that the financing methods used in some countries for certain types of borrowers could usefully be applied more widely throughout the Community in order to adapt the supply of funds to the specific needs of priority investment programmes in respect of the rational use of energy. A number of ideas are listed below:

- the leasing of plant as a means of helping small and medium-sized firms to acquire plant; this could even apply to households in some cases (e.g. to buy heat pumps). This might mean amending existing tax regulations;
- making available forms of finance better suited to more isolated economic operators, like small and medium-sized firms and households, through special bodies or even energy supply companies;
- financing terms whereby capital need not be repaid until after the project begins to pay off.

As well as enabling financial institutions to finance investment as a result of improvements in the general framework there are other areas where the public authorities can play an important role. The annex contains a list which shows the measures already taken to rationalise the use of energy in a number of Member States, including refinancing facilities and providing guarantees at a reasonable cost. These arrangements should be more widely applied in certain clear-cut cases.

(32) Community finance should also be used in this connection. The Commission is intending to discuss with the EIB what can be done to help the latter step up its efforts in this area along the lines of the above examples.

The Commission is also intending to carry out a similar study in respect of the loans which it manages itself.[1]

(33) In addition, the amounts available for lending must be increased. In order to meet this need, the Commission has proposed that the Council authorise one loan tranche of 1 billion ECU to be used to achieve the Community's priority objectives, in particular the rational use of energy, the use of other energy sources instead of oil in all sectors and the infrastructure which will make this substitution possible. The loans granted in this area will use up a considerable proportion of this tranche.[2]

(34) Preventing or remedying the partitioning of the market

The Commission considers that various legislative initiatives should be taken to prevent the partitioning of the market in new technologies relating to the rational use of energy. Where there are no suitable standards or codes, the opportunity should be seized to adopt Community legislation. As has been obvious from work on performance standards for heat generators or heat pumps, it is the recent legislation which is most difficult to harmonise.

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(1) See the Reconversion Scheme (Report by the Commission to the ECSC Consultative Committee - COM(81)717 final)

(2) It should be noted that there has been a regular increase in energy loan activities by the ECSC, the EIB, Euratom and the NCI. Total lending operations (including the production, infrastructure and energy sectors) increased from 1,230 million ECU in 1974 to 4,159 million ECU in 1980. Loans for the energy sector increased from 480 million ECU in 1974 to 1,649 million ECU in 1980. Energy is now the largest sector with 46% of all loans in 1979 and 41% in 1980, compared with only 11% in 1970. Of this total of 1,649 million ECU, 1,036 million were for the electricity sector, 226 million for the coal sector, 253 million for the oil and gas sectors while only 135 million were spent on restructuring demand. Community financing represents in all 4% of total energy investment in the EEC, although the percentage may be much higher in specific Member States or in specific energy sectors.
In addition, the ERDF, and in particular the non-quota section, already operates in the alternative energy field in the Community's less-favoured areas. The Commission considers that the ERDF's operations should be stepped up in the field of the rational use of energy, particularly where energy-saving is concerned.

Guidelines will be suggested where appropriate and detailed information given in a Communication concerning an Action Programme on the Rational Use of Energy.

(35) Decentralisation of the decision-making process

The public authorities can play a vital role by simplifying and speeding up the procedures which plans for new plants have to go through. Generally - provided the collective purpose and overall consistency of projects is maintained - individual and local projects, which adapt national plans to local conditions, are important if programmes in the domestic sector and in that for small and medium-sized firms are to succeed.

In the Commission's view, regional and local communities are particularly well placed to:

(i) suggest ways of adapting aid schemes to local conditions (environment, climate, consumers' habits);

(ii) helping to work out energy balances;

(iii) informing local authorities, firms and individuals of the action open to them, and setting up education and information programmes aimed at the public and heads of industry with the support of local authorities, the general public and people engaged in the occupations and trades concerned;

(iv) list the resources which are not properly exploited (natural resources, heat, etc.);

(v) encourage the exploitation of local alternative energy resources (biomass, solar energy, geothermal energy and small heads of water);

(vi) encourage local transport projects and better use of equipment, and generally any measures likely to reduce wastage;

(vii) take steps to promote projects to recover heat, to set up and extend district heating networks and to recycle energy-rich materials.

The Commission also feels that more effort should be made to involve local and regional authorities in Community loans.

2. Dealing with problems specific to certain sectors of the economy

Problems in certain industrial sectors:

(a) Industries that are large energy consumers

(36) These industries, the specific difficulties of which have been mentioned earlier, would generally agree to accept prices which realistically reflect the state of the market. Without questioning this principle however, they consider that a number of steps should be taken, namely:

(i) allowing greater freedom for the implementation of private electricity or CHP projects;
(ii) working out a tariff structure which fairly reflects the benefits to the energy producer of certain types of investment by the consumer.

The Commission will consider these points carefully.

(37) In addition, some of the sectors in the greatest difficulty would like to work closely with governments to devise and carry through large-scale investment programmes in respect of the rational use of energy and fuel conversion[1], which would benefit the whole of the economy and not just the direct users. With a view to carrying out such programmes, the Commission has already begun to work out energy balances for a number of the major energy-consuming industries and will actively continue this work in order to have a clearer picture of the situation in the Community as a whole.

(38) The industries manufacturing basic chemicals are having to take a number of difficult strategy decisions in connection with their future supplies of raw materials. They may, in the long term, find

(1) For example: the French proposal for Energy Progress Contracts.

themselves at a disadvantage compared with industries located near sources of shale, heavy oils or open-cast coal. Diversifying supplies of raw materials, for example, by using methanol from offshore gas or by gasifying coal, requires major investment which often yields returns only in the long-term and involves high risks. It is inevitable, therefore, that these decisions often depend on whether the public authorities decide to introduce methanol as a synthetic fuel and which of their indigenous coal, wood or other plant resources they decide to develop. This being the case, the Member States could grant guarantees for certain projects. The Commission will consider whether and under what circumstances the Community could agree to offer subordinate guarantees in these cases.

(b) Small and medium-sized firms

(39) The measures already mentioned in the previous paragraphs will be of particular benefit to small and medium-sized firms.

Particular encouragement must be given to these firms to develop - jointly on their own initiative or through their professional associations or chambers of commerce - projects which could then be considered by the Community's banking agencies or, if necessary, by the Community institutions. Similar procedures could also usefully be envisaged for local authorities.

In addition the Commission is currently examining other ways of making the programmes for which it is directly responsible more attractive to small and medium-sized firms interested in energy investment.

The Commission also considers that special measures could be taken to help firms bring on to the market energy-efficient plant and equipment. To this end, the Commission would suggest that an examination should be made of the possibility of using tax incentives, such as applying the lowest VAT rate in force, in order to encourage consumers to purchase such plant and equipment.

Renovation of buildings

(40) Of particular importance in this sector, in the Commission's opinion, are aid for renovation, the continuity of assistance (financial and technical), more information for householders and the role of gas and electricity companies.

(i) Each Member State should give substantial financial aid for the renovation of buildings; this is currently being done in the Netherlands, Denmark and the Federal Republic of Germany. An amount of some 1,200 ECU could be given per unit for the following purposes:

(a) to ensure that low-rent accommodation is renovated at a reasonable rate and to maintain a certain level of comfort in spite of the increase in energy prices without the general need for supplementary income benefits or special tariffs;

(b) to provide outlets for equipment which is highly efficient but relatively expensive during the initial stages of the new production (new heating systems, controlled ventilation, etc.).

(ii) Financial and technical assistance must be continuous to provide potential investors with reliable information and above all to allow them to plan their investment programmes.

(iii) It has been found that in most Member States householders still do not have much idea of their energy consumption or of the best way to reduce it. In this connection, the Danish system of certificates would seem to be an extremely good idea[1]. The Commission will submit proposals on the subject in a document on the rational use of energy.

(iv) The Commission also considers that gas and electricity companies should be encouraged to do more in this area by urging householders to upgrade their accommodation and, where appropriate, providing the necessary loans and advice. If these measures lead to savings in energy and reductions in capital requirements, they can be of direct financial benefit to companies, as has been

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(1) Before and after any accommodation is renovated, it is visited by an energy specialist, the first time to decide on the most cost-effective solution and the second time to check that the work has been properly carried out. Subsidies are only granted after this specialist has issued a certificate to say that the work has been completed.

found in Italy and the United States. In any case, initiatives of this kind should never be discouraged on the pretext that they emanate from public enterprises.

Lastly, particular encouragement should be given to ensure that new buildings are energy-efficient. The Commission has had studies carried out in each Member State to define the efficiency standards which could be achieved by using relatively classical materials and suitable construction methods. The Commission is intending to set up a panel of experts to look at the ideas obtained and to see what could be done by the public authorities in various (financial, legal, and other) fields to encourage promoters tendering for public building contracts to use the designs, techniques and materials which are most likely to save energy.

Demonstration and R & D programmes

41) Apart from the specific measures outlined for the industrial sectors mentioned above, we should not forget the importance of national and Community demonstration and R & D programmes. The demonstration stage is the last essential step before marketing new techniques; it can thus be seen as important both for industrial policy and energy policy by encouraging the creation of new industries, new processes and new products. In addition, R & D efforts are needed in several areas in order to improve technologies or incorporate new technologies into industrial processes.

Some time ago, it became clear that the Community's multiannual programmes to support these projects in the field of energy saving and alternative energy sources, which go back to 1979, would be inadequate. Accordingly, in 1980, the Commission submitted to the Council specific proposals to double the appropriatio committed.[1] Where R & D is concerned, the Commission will propose to the Council in the context of its new strategy, that certain aspects of the present programme be reinforced or consolidated and that new topics should be covered in future.

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(1) Proposal for a Council Regulation (EEC) amending Regulation (EEC) No 725/79 as regards the Granting of Financial Support for Demonstration Projects in the Field of Energy Saving.

Proposal for a Council Regulation (EEC) amending Regulation (EEC) No 726/79 fixing the Maximum Amount of Aid to be made available pursuant to Regulation (EEC) No 1302/78 on the Granting of Financial Support for Projects to Exploit Alternative Energy Sources. (COM(80)567 final).

The Commission's reports on existing programmes emphasize the positive nature of what has been achieved since the existing regulations came into force. The Commission will publish the results of programmes as widely as possible in order to yield the greatest benefit to industry in the Community.

Performance monitoring

(42) It is important to get a better idea of the results achieved in the field of energy saving. This can be done by:

- econometric analyses of how past energy requirements have been cut, covering the main factors affecting each sector: its economic position, pricing, climate, structural changes, specific measures;

- indicators showing short-term progress in the residential, industrial and transport sectors.

The Commission will be submitting suitable proposals in due course.

Financial incentives for certain types of investment

(43) a. Apart from the measures indicated above, the Commission considers that special incentives from the public authorities are justified in order to speed up the following types of investment: investment to promote heat production for remote heating systems, coal burn and the processing of heavy oil, if the investment in question satisfies the following criteria:

- energy from waste,
- general benefit for the community at large,
- payback period (more than 3 years),
- implementation needed soon.

This category of investment concerns the industries that are large energy consumers, certain small and medium-sized firms, certain tertiary activities and, in general, the community at large. It covers:

1. Investment in heat production for remote heating systems from industrial waste heat and solid and residual fuels.
2. Investment in deriving energy from certain types of urban, agricultural and industrial waste.

3. Investment in the conversion to coal of fuel oil boilers used in industry.

4. Investment in operations relating to the preparation of imported coal.

5. Investment in the processing of heavy oils produced in the Community.

Re 1

Investment of this kind is intended to permit the use of waste heat from certain industries (the chemical, petrochemical, iron and steel, non-ferrous metals, ceramics and brick industries) and the use of various types of waste (domestic refuse, certain types of industrial or agricultural waste and their by-products) or promote the use of solid fuel (coal and its by-products, lignite (brown coal) and its derivatives and peat) for heat production for remote heating systems.

Investment of this kind offers many advantages, including the possibility of saving energy, using other fuels instead of oil, improving the security of supply where energy is concerned and causing less environmental damage etc.

Re 2

Certain types of urban, agricultural and industrial waste can be processed in such a way as to be used to generate energy, in particular biogas. Using waste in this way is also less damaging to the environment.

Re 3

Investment of this kind should make it possible for firms to speed up the replacement of fuel oil boilers by modern coal boilers.

Re 4

The coal imported in large ore ships can rarely be used as it is. Some cargoes are delivered directly to the large consumers (power stations, coke ovens and large cement factories) which can receive large quantities at any one time and have appropriate facilities for preparing the coal received in such a way that it can be used in the conditions specific to the process in question.

Equipment of this kind will usually be too expensive and under-used in the case of small and medium-sized users where coal ought to make headway in the next few years. Consequently, consideration must be given to establishing, as soon as possible, preparation centres designed to keep to a minimum the cost involved in breaking bulk, intermediate storage, coal preparation and the distribution of products meeting the specifications of heat appliances which are geographically dispersed and differ in their size and the type of fuel required.

Re 5

Investment of this kind, which is intended to result in motor fuel or heating fuel being obtained from heavy oils produced in the Community which cannot be used as they are, represents a new source of supply.

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* *

The categories of investment indicated above are of special importance in relation to the attainment of the Community's energy objectives. In many Member States they already qualify for aid in the form of direct subsidies or subsidised loans. For example, there are measures to promote conversion to coal (in Denmark, France, the Federal Republic of Germany, Greece, Ireland and the United Kingdom) and to promote the development of heat networks (in Denmark, France, the Federal Republic of Germany, the Netherlands and the United Kingdom).

The Commission is in the closing stages of an examination of these incentive schemes which it has carried out in order to determine which categories of investment might require additional efforts in certain Member States or at Community level, and to determine the most appropriate and the most effective procedures.

b. If power stations and certain industrial plants are to be converted to coal it is essential that port facilities for coal storage and handling, selected as being of value to the Community, should be developed. Community loans should be made available for this purpose, possibly coupled with the facilities granted under the European Monetary System.

* * *

In the light of what has been said in this Communication, the Commission intends to complete the work programme set out in Annex 7.

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The Commission asks the Council:

(a) to discuss the analysis and lines of approach set out in this Communication;

(b) to adopt the draft Recommendation attached to this Communication once it has received the opinions of the European Parliament and the Economic and Social Committee.

Annex 1

Present and Future Annual Levels of Investment in the Rational Use of Energy

	Annual levels in 1980 expressed in bn EUA	Possible annual levels in 1985 expressed in bn EUA	Possible annual levels at the end of the decade expressed in bn EUA
Federal Republic of Germany	3	5	up to 6
France	1.8	5	up to 9
United Kingdom	1 - 1.5	2 - 2.5	
Italy	0.5 - 1	4	
Netherlands	0.3	1	
Belgium		1	
Denmark	0.4	0.6	
Ireland			
Luxembourg			
Greece			
TOTAL - billion EUA:	7 - 8	19	25(1)

(1) Investment and Employment in an Energy-Efficient Society: Second St Geours Report, Chap. VII. (However, the St Geours Report sets this target for 1985).

Annex 2

Examples of Progress Indicators: Situation in 1980

	B	DK	DE	F	HE	IRL	IT	NL	UK
Estimated total energy savings (1973 = 0%)	16%	24%	13%	13%			18%	18%	16%
Number of dwellings renovated annually as a percentage of the housing stock				1.5%				6%	2.5%
Energy consumption per unit of value added in industry (1970 = 100)	96.8	.	91.6	73.7	.	.	76.8	134.5	87.2
Total consumption of coal as a percentage of energy requirements in each sector:									
. power stations	23.7	80.8	58.5	28.8	52.5	24.8	9.7	10.7	71.6
. industry (including coke)	30.6	18.1	22.7	17.8	10.5	2.9	10.7	8.9	15.6
Total consumption of coal for district heating (mtoe)	0.048	0.735	1.227						0.12
Percentage electricity produced from sources other than oil and gas	49.0	80.9	74.5	73.4	58.6	27.7	24.5	20.7	87.1

Annex 3

Investment in the Rational Use of Energy: Situation in 1980

	B	DK	DE	FR	IT	NL	UK
	BF	DKR	DM	FF	LIT	FL	£
RUE Investment		3.8 bn	7.3 bn	10 bn	1300 bn	1.875 bn	0.6 - 0.9 bn
As a percentage of total energy investment		4.9%	2.5%	1.5%	5 - 9%	(4.3%)	10 - 14%
As a percentage of gross fixed-capital formation		5.6%	2.0%	1.7%	1.1 - 1.7%	(2.7%)	1.5 - 2.2%
Public sector RUE budget	0.166 bn	0.5 bn	1.74 bn	2.4 bn	39 bn	0.8 bn	0.12 bn
As a percentage of RUE investment		13%	24%	24%	3 - 5%	43%	13 - 20%
As a percentage of all budgetary expenditure on energy	(2%)	7.7%	1.9%	3.0%	3.3%	7.8%	(6 - 7%)
As a percentage of total budgetary expenditure	0.008	0.22	0.25	0.18	0.02	0.41	0.12

Note: bn = billion (thousand million)

Annex 4

Comparison of the Main Features of Some Major Schemes to Encourage Investment in the Rational Use of Energy in the Home: Situation as at May 1981

Country	Description	Participation	Maximum aid	Remarks
Belgium	System of tax credits for thermal insulation	40% tax relief on the total cost of the investment: Min. 222 ECU; Max. 2,668 ECU		
Denmark	Programme of grants to encourage total insulation: 1981-84	1981-82: 20% for landlords, 30% for tenants	895 ECU	Degressive aid: 1983: 15 20% 1984: 7.5 10%
Federal Republic of Germany	Programme for the period 1978-82 of subsidies and tax relief for heat saving (joint Federal and 'Land' programme)	25% tax credit or tax relief over 10 years or 10% per annum of the investment cost	1,230 ECU	In the majority of the Länder even the aid budgets for 1982 have been committed. Some have cut back the programme or tightened up the conditions of eligibility
France	Grants or loans with interest rebates for home owners Grants for public dwellings	Grants up to 65 EUA per toe saved. 2% interest rebate 30% of costs	approx. 100 ECU	
Italy	Draft law: aid for energy-saving installations in existing buildings and for new air-conditioning systems in new buildings	30%	up to 23,000 EUA (for a block of houses)	Budget for 1981: 92 MEUA Budget for 1982: 30 MEUA
Netherlands	National insulation programme Grants	30% on average	1,444 ECU	
United Kingdom	Programme of grants for home insulation	66% 90% for elderly people and those on low incomes	110 ECU 153 ECU	

Annex 5

Final Energy Consumption in 1980 and Estimates for 1990 (million toe)

Potential Energy Savings 1980-90 and 1980-2000 (%)

The figures on energy consumption and energy savings shown in the following tables are taken from national programmes, private studies and from information gathered by the Commission's departments. They are no more than estimates and the Commission hopes that, as a result of the discussions which will take place within the Council, these figures will be supplemented and, if necessary, corrected.

It is estimated that between now and 1990 energy savings could amount to between 15 and 20% of present consumption. The potential savings vary markedly from one industrial sector to another. Since 1975, Community industries have, in general, achieved energy savings of the order of 20%. Between now and 1990, savings of a similar order appear feasible for the Community, although German industry has apparently already achieved a high level of savings. Other Member States, however, have a high energy-saving potential, particularly those where high-energy-consumption industries predominate. The potential energy savings to be made by the small and medium-sized firms - which account for about a third of industry's total energy consumption - should be approximately 10% in the period to 1990 and 20% in the period to the year 2000.

In the transport sector, the potential saving between now and 1990 is generally reckoned to be 15%. The longer-term trend depends very much on the introduction of new technologies and has been put at between 20 and 35% in the period to the year 2000.

Finally, in the residential housing and tertiary sector the greatest potential is offered in space heating. In the long term, much of the present housing stock will be replaced. The energy consumption of domestic appliances could be reduced by 15% by 1990 and by 30% by the year 2000.

As far as agriculture is concerned, the greatest potential for energy saving lies in heating, drying and conservation.

Table 1

Final consumption of energy by sectors, in the Community in 1980

	Belgium	Denmark	Germany	Greece	France	Ireland	Italy	Luxembourg	Netherlands	United Kingdom	EUR-10
1. (mtoe)											
Industry	12.95	3.79	65.04	3.96	44.76	1.94	37.30	2.28	13.88	41.41	227.30
Transport	5.80	3.15	40.43	3.93	31.72	1.74	24.61	0.49	8.59	33.07	153.52
Households	13.14	7.59	75.81	2.76	51.57	2.73	33.75	0.59	21.01	56.09	265.05
Non-energy uses	2.82	0.41	19.38	0.55	12.11	0.13	8.87	0.04	8.37	7.40	60.08
Final consumption	34.71	14.94	200.66	11.20	140.16	6.54	104.53	3.40	51.85	137.97	705.96
Energy industries	3.73	0.67	18.36	0.90	13.46	0.30	10.77	0.03	4.61	15.09	67.91
2. (% of total)											
Industry	37.3%	25.4%	32.4%	35.3%	31.9%	29.7%	35.7%	66.9%	26.8%	30.0%	32.2%
Transport	16.7%	21.1%	20.1%	35.2%	22.6%	26.6%	23.5%	14.6%	16.6%	24.0%	21.8%
Households	37.9%	50.8%	37.8%	24.6%	36.8%	41.7%	32.3%	17.4%	40.5%	40.6%	37.5%
Non-energy uses	8.1%	2.7%	9.7%	4.9%	8.7%	2.0%	8.5%	1.1%	16.1%	5.4%	8.5%
Final consumption	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

Source: European Communities Statistical Office - December 1981.

Table 2

Final Energy Consumption - Estimates for 1990

Country	Industry	Transport	Residential and Tertiary[1]
Belgium	20	7	15
Denmark	5	5	9
France	70	36	53
Greece	8	6	4
Ireland	4	2	3.5
Italy	55	29	40
Luxembourg	3.5	0.6	1
Netherlands	29	11	24
Federal Republic of Germany	99	41	83
United Kingdom	71	37	57
EUR-10	365	175	289

(1) Residential heating accounts for about 75% of this category which also includes the craft trades, commerce, agriculture and fisheries.

Table 3

Potential Energy Savings in the Periods 1980-90 and 1980-2000 (%)

	Industry		Transport		Residential and Tertiary(1)	
	1980-1990	1980-2000	1980-1990	1980-2000	1980-1990	1980-2000
Belgium	up to 60%				50 %	
Denmark					40 %	
France	25%		15-20 %		25 % (20-25 %)(1)	
Greece						
Ireland						
Italy	25%					
Luxembourg						
Netherlands	15-17 %	27-31 %	15 %	25 %	33 % (25 %)	45 % (35 %)
Federal Republic of Germany	12 %				20 % (15 %)	up to 50%
United Kingdom	20 %				20 %	25 %
EUR-10	15-20 %	25-35 %	15 %	20-25 %	20 % (15-20 %)	up to 50% (25-30 %)

(1) The figures in brackets relate to agriculture.

EXAMPLES OF IMPROVEMENTS TO FINANCIAL CHANNELS FOR ENERGY INVESTMENT IN THE INDUSTRIAL SECTOR

1. There are three main factors to be considered regarding lending for energy investment by industry :

   - the number and quality of projects put forward;
   - the borrowing limits of the customers concerned;
   - the refinancing costs of the banks.

   Each of these will be examined in turn, to give examples of possible improvements to financial channels.

2. The number of projects put forward is of course strongly influenced by the general economic situation, and clearly individual financial institutions can have no direct influence over that. Nevertheless, their own marketing strategy can raise significantly the profile of the energy problem in industrialists' thinking. An ambitious marketing approach is reflected in the creation in France of a series of financial agencies, specializing in the problem of energy financing (the 'Sofergies'). By July 1981, 13 schemes for the creation of such agencies were in existence.

   More modestly, financial institutions can offer special loan packages for limited purposes, for example for conversions from oil-fired to coal-fired boilers (e.g. in the U.K.).

   Either way, such initiatives generally suppose that there will be a greater involvement by financial institutions in the technical as well as the economic development of a projet, to raise its quality. This may involve building up a better in-house expertise (e.g. a Business Advisory Service), or calling in the services of specialized external consultants, eventually with the assistance of government grants (e.g. the Netherlands) or employer's organizations (e.g. schemes run by the BDI (Germany) and the Confindustria (Italy).

3. A number of initiatives are possible to extend the borrowing limit of the customer, or to enable him to finance his capital purchases "off - balance sheet", notably through equipment leasing schemes. Examples of the former are :

   - schemes for the deferral of interest and/or capital payments until project revenues are earned;
   - including within the loan any increase in short term working capital requirements;
   - loans combined with equity participation;
   - loans with climbing repayment schedules.

Obviously schemes of this kind, which can be loosely characterized as 'project' financing, are normally only acceptable for projects with quick payback periods (so that the risk is limited), and where companies, while reaching the end of their borrowing limit, are not in any danger of early collapse. It is difficult to form any judgement about how widespread is their use: however, it is felt that while examples exist in most Member States, the broad mass of lending is done in more conventional ways.

It has been noted already that leasing schemes are expanding rapidly in France. They are also of significance in at least Germany and the United Kingdom as well and probably elsewhere. However, their further development in the United Kingdom (for example) is limited by a relatively less favourable tax environment, and by a reluctance of business to allow too many assets to pass into external ownership.

Clearly there are practical limits to what is possible with the kind of schemes described above. Therefore, governments in many Member States have also taken steps to facilitate private lending by offering loan guarantees for small and medium-sized enterprises at reasonable cost (e.g. in the U.K. through the regional offices of the Department of Industry, and in the Federal Republic of Germany, through regional agencies set up by some of the Länder).

4. Finally it remains to consider the refinancing costs of lending medium term finance. Banks will be wary about over-extending their medium to long-term lending, particularly if interest rates are volatile, and if there is a sentiment that the long term trend could be to higher interest rates. Governments can help here either by offering interest rebates for such loans, or by transferring a part of the risk of medium-term lending from private bodies to public bodies, backed if necessary by the public sector budget.

For example, in Germany, finance is available at reduced interest rates to small and medium-sized enterprises through the 'Sonderprogramm', managed by the Kreditanstalt für Wiederaufbau. Some of the German Länder also have schemes for reducing interest rates (e.g. Hamburg). In France there have been schemes to reduce interest rates on loans to industry for energy-related investments. At the moment, however, they are limited to investments in conversion to the use of coal.

The Kreditanstalt für Wiederaufbau is also a good example of a public body working in partnership with the private financial sector, to take up some of the load of providing industry with medium term finance at reasonable rates. It is, in many respects, a model for similar bodies elsewhere at a national or even a Community level, since it has :

- established itself as being complementary to private action rather than competitive;
- established simple and well-publicized procedures, which enable it to place substantial amounts of loan finance with small and medium-sized borrowers, without incurring heavy staff overheads, or seeking to disturb the relationship of the small borrower with his local bank.

France provides an example of a rather different kind of body, specializing in providing subordinated loans (loans with a low ranking) and equity finance for industries in need of restructuring (the 'Institut de Développement Industrielle'). In the United Kingdom, the National Enterprise Board is an example of a body with a broadly similar purpose, but extending also to the supply of venture capital to innovatory firms.

Annex 7

The Commission's Work Programme relating to Investment in the Rational Use of Energy

The Commission intends to embark on - or to continue with - the following action to encourage investment in the rational use of energy:

1. Pricing and Taxation (paragraph 29)

   - To carry out the follow-up work outlined in its Communications on Energy Pricing Policy (COM(81)539 final) and on the Taxation of Petroleum Products (COM(81)511 final).

2. Training and Information (paragraph 30)

   - To propose amendments to the Community's demonstration programmes with a view to adding to the list of projects eligible for aid; software development, and management and training methods, with particular reference to the heads of small and medium-sized firms.
   - To contribute aid towards training and information facilities for the various parties affected by the rational use of energy, particularly in firms.

3. Community Financing (paragraph 32)

   To investigate ways of improving financial channels and financial arrangements for Community loans, both within its own departments and in conjunction with the EIB.

4. Opening-up of Markets (paragraph 34)

   To draft Directives on performance standards for energy-saving products or equipment.

5. Industries that are Large Energy Consumers (paragraphs 36, 37 and 38)

   - To examine the pricing policy desiderata of the industries that are large energy consumers.
   - To continue the work on energy balances.
   - To examine whether the Community could contribute - in the form of subordinate guarantees - towards the guarantees granted for certain types of investment, and, if so, under which conditions.

6. Small and Medium-Sized Firms (paragraph 39)

- To consider steps to make the (research and development, and demonstration) programmes directly under its control more attractive for small and medium-sized firms.

- To ensure wide dissemination of the results of demonstration programmes.

7. Renovation of Buildings (paragraph 40)

- To prepare suitable proposals to extend to the rest of the Community the Danish certificate system.

- To ask a panel of experts to examine the various facets of the action which the public authorities might take to encourage developers who tender for construction contracts financed from public funds to use the designs, methods and materials which allow of the greatest energy savings.

8. Performance Monitoring (paragraph 42)

To prepare suitable proposals for monitoring more closely the results of energy-saving initiatives by the public authorities.

9. Financial Incentives for Certain Types of Investment (paragraph 43)

To complete the examination of the financial incentive schemes in operation in the Member States in order to determine which categories of investment might require additional efforts in certain Member States or at Community level, and to determine the most appropriate and the most effective procedures for this purpose.

Draft Council Recommendation

concerning the encouragement of investment in the rational use of energy

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

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,

Having regard to the Communication from the Commission on investment in the rational use of energy,

Whereas economic activity in the Community is being hampered by the constraints imposed by substantial oil imports and by the concomitant uncertainty concerning supplies, prices and interest rates;

Whereas even a slight revival in economic activity in the industrialised countries is bound, in conjunction with the forecast increase in oil demand in the rest of the world, to accentuate those constraints;

Whereas energy policies should help bring about, as soon as possible, the structural changes needed in order inter alia to get a tighter grip on energy demand; whereas those changes can be accomplished only by substantial investment in the rational use of energy;

Whereas investment in the rational use of energy represented only 0.4% of the gross domestic product in the Community in 1981; whereas it should therefore be increased considerably;

Whereas, by helping to improve the competitiveness of firms and by enabling new industrial activites to be developed, increased investment is an important element of an energy and industrial strategy aimed at promoting lasting economic recovery;

Whereas, moreover, it may have a beneficial effect on employment;

Whereas, in view of the importance of this investment for economic activity and the specific character of some of the investment, the public authorities should encourage such investment;

Whereas, in addition to special measures to further certain types of investment, steps should also be taken to improve the general political, economic and financial framework in which investment decisions are taken;

Whereas there is uncertainty concerning prices and the trend of the relative prices of the various forms of energy, inter alia due to the pricing and taxation policies currently applied in the Community;

Whereas this uncertainty has an adverse effect on investment decisions;

Whereas economic operations ought to receive better training and information on the importance of the rational use of energy both to their own activities and to the community at large;

Whereas high, unstable interest rates are having an effect;

Whereas in certain cases the financial channels and the financial arrangements need to be better adapted to the specific requirements and situation of the investors;

Whereas the persistent partitioning of national markets is hampering the development of the energy-saving and alternative-energy industries by preventing them from taking full advantage of possible economies of scale;

Whereas over-centralisation of decision-making may help to slow down the promotion and spread of the rational use of energy;

Whereas certain sectors, in particular the major energy-consuming industries, small and medium-sized firms and the building sector, face special problems;

Whereas the Member States should make a concerted effort to implement a consistent series of measures designed to overcome these problems and obstacles;

HEREBY RECOMMENDS THAT THE MEMBER STATES:

1. appreciably increase their investment in the rational use of energy so that, taking the Community as a whole, it represents approximately 0.7% of the gross domestic product in 1985 and approximately 1% of the gross domestic product by the end of the decade;

2. in order to attain these objectives:

   - apply energy pricing policies which unite the pursuit of energy objectives with efforts to ensure that the prices truly correspond to market conditions and costs, together with a consistent and continuous policy on the taxation of energy products, which likewise takes account of those objectives;

   - encourage gas and electricity companies to enter into long-term commitments with industry with regard to their tariff policy;

   - maintain close contacts, coordinated at Community level, with the governments of the energy-exporting countries with a view to establishing stable trading relations favouring the conclusion of long-term contracts;

   - improve training and information facilities for certain economic operators, in particular small and medium-sized firms and households, by ensuring that they have access to cheap and reliable technical advisory services;

   - take steps to interest local and regional authorities in Community loans;

   - encourage better adaptation of the financial channels and of the financing arrangements to the specific requirements of priority projects involving investment in the rational use of energy (e.g. leasing of equipment, financing terms, refinancing facilities, making guarantees available at reasonable cost and so forth);

- avoid the partitioning of the Community market as a result of the adoption of national legislation which has not been harmonized at Community level;

- simplify and speed up the procedures to which projects involving new installations are subjected;

- encourage a certain degree of decentralisation of decision-making, since adaptation to local conditions is inter alia an important factor in the success of rational energy use programmes directed towards the domestic sector and small and medium-sized firms;

- encourage small and medium-sized firms to join forces to work out projects eligible for Community loans;

- examine the possibility of using tax incentives, such as applying the lowest VAT rate in force, in order to encourage consumers to purchase energy-efficient plant and equipment;

- provide substantial financial aid towards the renovation of buildings;

- ensure continuity in financial and technical assistance to ensure that the prospective investor has better information and, above all, to allow him to plan his investment;

- urge gas and electricity companies to encourage householders to renovate their homes by helping to provide the requisite loans and advice.