Economic growth and energy conservation

European File

'The gravity of the risks incurred by Europe due to her dependence on external supplies calls for a particularly vigorous and comprehensive policy for rationalizing the use of energy.' This is the analysis of Mr Jean Saint-Geours and a group of independent experts — energy specialists, economists, politicians, trade unionists and ecologists — contained in a report drawn up for the European Commission entitled: 'Energy-efficient growth'.

1. The Saint-Geours report

For probably the first time, a rigorous analysis of the Community energy potential and energy conservation techniques has been placed in its overall economic, institutional, social and cultural context. The principal conclusion of the group chaired by Jean Saint-Geours is that Europe can meet the energy challenge without putting at risk the values, traditions, well-being and liberties which Europeans hold dear to their hearts. The development of an energy-efficient society cannot be decided in an economic planning office. It demands a high degree of individual initiative and responsibility.

It is not a question of renouncing economic growth but one of redirecting growth in terms of contents and quality. On the one hand, low economic growth will delay the changes needed to bring about greater economic moderation. On the other hand, in a world where price increases for imported energy generate unemployment and inflation, rapid growth can only last if it is based on a long-term energy saving

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policy which is more comprehensive and more radical than those seen in the past. Such a policy can only succeed if it has large popular support.

In a letter to Roy Jenkins, President of the European Commission, the chairman of the group of experts stresses the point that public involvement and public understanding in Member States will be that much greater if political action is seen to be an element of a Community strategy which aims at energy-efficient growth. The group recommends that such a policy be implemented in the three key areas of pricing, research and energy use.

- ☐ The Nine must harmonize their policies to ensure that energy prices take full account of the cost of replacing resources. Costs and prices should be more transparent and be made more public.

- ☐ Research, development and demonstration programmes dealing with energy conservation techniques should be expanded through the creation of European institutions and structures for scientific research and by studying the economic and social questions involved in the diffusion and effective use of energy conservation technologies.

- ☐ Common standards for technical performance must be introduced by voluntary agreements or legal provisions covering motor vehicles, heating installations and the principal household appliances, whether imported or manufactured in the Community.

The group also calls on the European Commission to draw up and recommend to the Nine a comprehensive and integral policy to dissociate economic growth from energy consumption. This would help create a favourable investment climate in each country and encourage innovation.

Suggestions put forward by the group cover efficiency standards for buildings, information and publicity, the creation of a network of advisory centres supported by training facilities, promoting the development of methods for measuring, regulating and monitoring energy consumption, and a substantial increase in financial allocations for energy saving measures (investment aid in particular). Finally, national, regional and local authorities can through their purchasing, internal organization and taxation policies, have great influence over the efficient use of energy. Bold initiatives taken in these areas can give new scope for industrial initiative and, by making energy conservation 'good business', lead to the creation of new jobs.

What savings are possible?

Over the medium term, energy conservation can release a great deal of resources. These resources are there for the taking if only researchers, manufacturers, consumers and governments can coordinate their efforts. According to the Saint-Geours report, savings possible by the year 2000 could be as much as 20-35% in the transport sector, 15-35% in industry and agriculture, and up to 50% in the housing and service sector.

☐ In the transport sector, the technological opportunities are :

- for road transport (two-thirds of consumption in this sector): new car designs leading to smaller, lighter, more aerodynamic cars with improved tyres, fuel and lubrication, special motors — preferably diesel — and more economic electronic fuel injection systems. The drivers of these new types of cars may be encouraged to be more 'relaxed' and be more energy conscious. Improvements in public transport systems can also be examined, particularly urban systems, even though enormous savings cannot be expected simply by substituting personal transport systems by public transport;

- for railways: using lighter materials, reducing air-resistance and recuperating energy released through braking, can all lead to considerable savings;

- in aerospace: the new generation of engines can bring about large savings as can new wing design and the use of lighter structures;

☐ Savings in the domestic and service sectors and in particular heating (80% of consumption in these sectors) which can be made by:

- better consumption discipline. Raising the temperature above 19° or 20° increases consumption considerably;

- increasing thermal insulation in existing buildings and improving the design of new ones and making use of new materials;

- an improvement of materials and installations (boilers etc.) and extensive use of electronics to regulate and control temperature;

- the extension, where conditions permit, of district heating systems and the development over the long term of new technologies: heat pumps, solar heating etc.

☐ In industry and farming, energy savings can be made through:

- the relative decline of various large energy-consuming sectors: steel — which absorbs a quarter of industrial energy consumption in France and in the United Kingdom — and also chemicals, paper pulp and certain activities in the building sector etc;

- the recuperation of energy in the form of heat and in certain cases the combined production of heat and power. The energy yield in a thermal power station in relation to fuel used, is about 35%. By contrast, under certain conditions, an integrated plant can achieve a yield of 75%, of which 25% is electricity and 50% heat which is reusable by district heating networks;

- increased use of electronics and microprocessors to improve regulation and control;

- the development of new, less energy-consuming products, whose components can also be recycled;

- increased recourse to renewable energy sources such as solar energy.

It should be stressed, however, that the development of an energy-efficient society is not just the concern of science and technology. A number of economic, cultural and institutional brakes must be released and, ultimately, our models of production and consumption may have to change. Which is to say that simply imposing norms or controls is not enough. The Saint-Geours report argues in favour of greater public participation. The people should be involved in decision making about collective issues. Within a pluralist society they should also be encouraged to experiment in an autonomous way with new forms of social life and new, more energy-saving ways of living. In the long term, this could mean small towns or medium-size communities fuelled by solar energy. Current aspirations for a higher quality of life, with more satisfying and less competitive jobs, greater respect for the natural and human environment — as shown by the development of ecological ideas — are also factors which may help reduce energy consumption.

The obstacles should not be underestimated however:

☐ one of these is the price of energy. When the user is not fully aware of these costs or takes little long-term account of them — and in particular the scarcity of certain types of energy — wastage is effectively encouraged;

☐ other obstacles are linked to the desire for short-term profitability. This has particularly been the case with industrial investment in property, especially when the property is not occupied by its owners. What is the point of modernizing the heating system if the fuel-oil is paid for by the tenant?

☐ in two large energy-consuming sectors such as cars and the heating of buildings, legal norms and requirements are sometimes inadequate. The production and rational use of heat and power are often hindered by rigid organization which helps centralize production whilst segregating the different forms of energy;

☐ consumer information and education are often lacking. Even people in industry are sometimes unaware of the materials and processes which are available.

2. Action by the Nine

Creating the right conditions for energy saving is generally the responsibility of national governments. They have already implemented programmes which have helped reduce the Nine's energy consumption by about 8% between 1974 and 1977. Apart from certain recent crisis measures which limit, for example, car usage or heating-oil consumption, the range of measures adopted is very wide and is increasing all the time. This covers:

- thermal insulation of buildings: the obligation to insulate new homes and also to renovate existing homes (Denmark, Germany and the Netherlands in particular);

- heating systems: improving or converting installations, standards for installations, maintenance control, limitation of the maximum temperature of offices and homes etc;

- transport: information campaigns, speed restrictions, control of energy-conservation publicity, voluntary agreements with the car industry for progressive improvements of vehicle performance;

- research assistance in developing and demonstrating new processes as well as industrial investment aid. Major efforts are made in this area by Denmark, Germany, France, the Netherlands and the United Kingdom.

Endowed by the European Treaties and by various resolutions adopted by the Nine with the responsibility for drawing up a common energy policy, the Community has attempted to encourage freer exchange of information between the Nine and to ensure a certain amount of coordination of their energy conservation efforts.

- Measures taken by Member States — adoption of norms, investment aid etc. — could, if not suitably harmonized, hinder the free movement of goods within the Common Market or cause a distortion of competition. Different obligatory fuel-consumption norms are applied in Europe and these tend to segregate the large market which the car industry needs for expansion, e.g. the specifications of the different models varies according to the countries in which they are sold. The harmonization of norms and additional financial assistance from the Community can open up a large market for new products and processes.

- The experimental nature of many national programmes makes the exchange of results and information particularly valuable; coordination of such research can prevent a costly duplication of effort and enable general-interest studies to be fruitfully conducted.

- Looked at in its broader context, an energy savings policy is inseparable from policies for employment, industrial reorganization and external relations. In all these areas, the Nine has conferred certain responsibilities on the Community. In the longer term, the problem of energy-efficient growth will require fresh thinking about a new model of society for the Common Market countries — a model which must be developed at the European level.

Several measures have already been taken by the Community to encourage energy saving:

- since 1975, the Nine have adopted several recommendations — based on European Commission proposals — aimed at reducing energy demand and ensuring more rational use of energy in buildings, industry, road transport etc. Three directives (of an obligatory nature) were adopted in 1978 and 1979. They deal

with the performance of heating appliances (for hot water or heating) and on the presentation of energy consumption information on household appliances;

- a Community research programme coordinating the work of numerous national laboratories was introduced between 1975 and 1979 at a total cost of 11 million European units of account.[1] A new programme extending to 1983 shall be endowed with 27 million EUA;

- financial aid (55 million EUA for the period 1978-81) has been accorded to demonstration projects to accelerate the development and commercialization of new energy-saving equipment. Community loans will be available in the near future for such investment projects.

One step further: new Commission proposals

The European Commission is now proposing that the Nine reinforce their efforts and adopt energy savings programmes of comparable effect. The aim is to achieve an additional 1% saving each year so that, for every 1% increase in economic growth, energy consumption will only increase by 0.8%, and by 1990 by only 0.7%. The Commission has outlined a general programme which would leave each country free to choose its priorities suited to national situations. The principal points of the programme are as follows:

- a transparent and realistic energy price and taxation policy taking account of scarcity and long-term costs;

- a progressive upward revision — in line with technical progress — of the performance standards required for new buildings and heating systems. Maintenance should also be better controlled;

- a construction code introducing obligatory norms for offices and other services and covering in particular, heating, air-conditioning and ventilation systems;

- financial aid for the modification of existing buildings and for demonstration projects aimed at public-sector housing and offices;

- scientific research and financial aid to assist the commercial promotion of new energy-saving equipment and processes;

- financial aid to encourage industrial investment in energy conservation and to develop advisory and expertise services for small and medium-sized companies which lack suitably qualified personnel;

- encouraging the combined production of heat and electricity and its rational use;

[1] 1 EUA = about UKL 0.62 or IRL 0.67 (at exchange rates current on 3 September 1979).

- ☐ a greater effort in the area of public information, education and publicity over energy prices, energy consumption of appliances and possible savings: labelling of domestic appliances, individual metering and invoicing of heating in multi-occupant buildings, standardized measuring methods and publicity concerning vehicle fuel consumption, energy savings campaigns directed at transport, educational programmes in schools at all levels, and in vocational retraining;

For its part, the European Commission tries to ensure:

- ☐ increased exchange of information and coordination within the Nine. Such coordination deals first and foremost with the harmonization of norms and national aids, scientific research, energy savings in buildings, evaluation of the effectiveness of industrial investment and the production and rational use of heat and electricity. The Commission is also studying the possibility of setting up a European technology data bank to bring together all available information on energy conservation and put them at the disposal of architects, engineers etc., throughout the Community as rapidly as possible;

- ☐ to pursue and extend its participation in research, industrial development and the commercial diffusion of new techniques;

- ☐ to encourage specialized international organizations to accelerate their work in establishing energy consumption norms, particularly for heaters and household appliances;

- ☐ to open negotiations with European manufacturers to establish jointly targets for voluntary reductions in fuel consumption.

△

As demonstrated above, the European Commission's proposals run along the same lines as the recommendations in the Saint-Geours report. But, according to the Commission, these questions should not only be discussed by Community organizations and national governments. A wider public debate on relationships between energy, economics, industrial and social problems must be stimulated. It is up to the European public to decide on the social changes which will be needed over the coming twenty years ■

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