COMMISSION OF THE EUROPEAN COMMUNITIES

ENERGY

EFFICIENCY IN THE CEMENT INDUSTRY

Edited by
J. SIRCHIS

ELSEVIER APPLIED SCIENCE

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PREFACE

The existence of significant uncertainty as to the long-term prospects for energy supply and demand following the rapid fall in oil prices, has stimulated both the international energy situation as well as that of the Community and made it essential that the substantial progress already made in restructuring the Community's energy economy be maintained and, if necessary, reinforced.

The European Energy Policy objectives for the year 1995 call for adequate energy supply, controlled energy prices and increased environmental concern. All of these constraints necessitate the rational exploitation of the primary energy forms by the EEC Member States.

The above objectives can be attained either by energy saving or by increased energy efficiency, or finally through the development of new technologies to augment both saving and efficiency. Better insulation, heat and material recycling, or application of improved processes, are typical examples.

Cement production is one of the most energy intensive sectors and requires a great quantity of energy. Although much progress has already been achieved today in the field of the energy economy in the cement industry in EEC countries, some stages of cement production still offer opportunities for further improvement.

CONTENTS

OPENING SESSION

Chairman: V Teixeira Lopo, President CIMPOR

OPENING ADDRESS

"ENERGY POLICY OF THE COMMISSION OF THE EUROPEAN COMMUNITIES"

F. KINDERMANN

Head of Division
Commission of the European Communities
Directorate-General for Energy
Technology Directorate
Programme Management : Solid Fuels and Energy Saving

If one goes back to the roots of the European Community, one discovers that two of the three Treaties deal, partly of completely, with energy.

- The Treaty establishing the EUROPEAN COAL AND STEEL COMMUNITY (ECSC) was signed in Paris in 1951.

- The Treaty establishing the EUROPEAN ATOMIC ENERGY COMMUNITY (EAEC or EURATOM) was signed in Rome in 1957.

Therefore, one could say that, from the beginning, the founders of Europe regarded energy as a very important brick for the construction of a real Community and one could even say that a good deal of the integrated Common Market has already been realised for coal, steel and uranium.

In spite of this, I must admit that there was virtually no real common energy policy existing before the first oil crisis back in 1973. Until then, the energy sector in the Community was characterised by twelve distinct national markets with a matching number of national policies which were more or less coordinated on the European level. It was only under the influence of the 1973 shock that quantified targets for selected energy carriers in the Community were defined. Of course, the main concern was, at that time, to substitute oil and to reduce the dependency of the Community. Therefore, alternative energy sources, solid fuels and energy efficiency, played a very important role, and it should be noted that the latter two are of very great importance to the cement industry, which is characterised by a high energy demand.

Anyway, once the European Energy Policy was established, it led very quickly to tangible results. In fact, the consumption of imported oil was halved within 10 years, from 62% in 1973 to 31% in 1985, and energy efficiency raised by ± 20%. This forced the Commission to propose new targets for 1995, which were adopted by the Council in September 1986.

I will not go into these in great detail as we all know very well that, since then, conditions on the energy market have changed drastically : oil prices went down, as did coal prices on the world market ; natural gas is pressing for a higher market share ; and in some countries, nuclear energy continues to expand. In addition to this, there is more and more concern about the environment and particularly about the so-called greenhouse effect. For these reasons, I would like to mention today only three of the present targets which are of importance to industry and will remain valid in future too :

- Energy efficiency will remain one of the most important topics of Energy Policy, for the reasons of economy as well as of environment.

- Solutions are needed to establish a well-balanced relationship between Energy and the Environment. This will certainly become even more important in future and will require adequate developments.

- Technology will have to play an extremely important role in achieving the targets.

It is quite interesting to see that these three items were amongst the Community's targets from the beginning. Yet, importance shifted from aspects of substitution and economics to the protection of the environment. In addition, there are the requirements of the integrated Market for Energy or, in short, 1992.

In fact, National as well as Community policies have to change to meet the situation that will exist after 1992. Energy is an area where this transition now has to be made in order to have the integrated European energy market followed by a true common energy policy at Community level.

The integration of Europe's internal energy market is already underway, and a number of new initiatives in this field have been launched since the beginning of 1989. These include new schemes for greater cross-frontier trade and competition in the gas and electricity sectors, a mechanism for taking into account the European dimension in the planning of major energy investments, and a new system allowing the transparency of gas and electricity prices. Other measures to ensure the 1992 deadline will follow.

In the longer term, however, it will be the Commission's task to propose to the Member States, a concise framework for an effective Community energy policy. Therefore, a new review of longterm energy prospects is at present underway, i.e., the 2010 study. A first disscussion paper, entitled "Major Themes in Energy to 2010" was realised by the Commissioner for Energy, Mr Antonio Cardoso e Cunha, at the World Energy Conference in Montreal last September.

As the Commissioner said in Montreal, the essential question facing all of us is the following : "Can we continue to develop the world's energy supplies, on a secure and economic basis, sufficient to maintain economic growth while at the same time ensuring that the global environment is protected and indeed improved?" The "Major Themes in Energy" shows possible alternative paths for our energy future. One is a "convential route" with continuing growth in energy consumption and CO^2 emissions. Another path suggests a way of controlling energy consumption and its environmental impact whilst maintaining economic growth - in other words, meeting the challenge of sustainable energy growth. In the months ahead, the Commission will refine its analysis, taking into account the reactions in the Community and internationally, to this document.
However, the preliminary findings were already communicated to the international press in early October.

In this context, it is quite clear that the major constraint, or challenge, facing energy policy in the next few years will be the environmental one. We have seen, for example, how much attention was focused on this issue recently at the world Energy Conference in Montreal. But we cannot afford either to neglect the more traditional concern of energy policy makers, that of security of supply. This is particularly true at a time when the world's need for oil and other energy supplies continues to grow steadily month by month. Action must be taken to curb this trend in order to preserve as far as possible our energy resource base and to protect the global environment.

With these two fundamental concerns in mind, it is quite clear that the major priority will have to be given to energy efficiency. In order to reduce the growth in energy consumption and the associated pollution.
Thus, the political target is set, and all possible actions have to be put in hand to reach it. Of course, this covers political and financial measures as well as technology but for reasons of time, I would like to concentrate on the latter one.
An excellent technical base to build upon has been created by the Community's energy demonstration programme which was set up in 1978 and concentrated on three major areas :

- Energy saving or energy efficiency ;
- New and renewable energy sources ;
- Solid fuels.

I feel I shouldn't go into too much detail because the area of interest to your industry will be presented during the course of the next two days. But, in order to let you have an idea of what is involved, I would like to give you some figures on the total programme and on the part devoted to energy saving.

1978-1989	Total Programme	Energy Saving	%
Number of projects	1,698	738	43.5
Total aid (MECU)	881.7	327.7	37.2

These figures prove that in the past, the Community already gave the appropriate attention to all the possibilities of saving energy and improving energy efficiency. Let me just say that the main technical areas were, and still are :

- Buildings
- Transport
- Industry

The demonstration programme, as it stands now, has pratically come to an end. An independent evaluation was carried out last year which highlighted the remarkable results obtained in the different areas, but also said that much more should be done to assure a widespread use of the results, and to match the new targets for energy at the beginning of the next century.

The Commission adopted this line and, consequently, proposed to the Council that the replacement for the existing demonstration and hydrocarbon technology scheme should be the THERMIE programme, a new programme for demonstrating new energy technologies and promoting their commercialisation in the European market. As for the current programmes, THERMIE will concentrate on the state beyond R&D by providing risk finance for the testing of new energy technologies on a nearly commercial scale. It will however, be more selective than its predecessor schemes and give more emphasis to the promotion and replication of successfully demonstrated technologies. The current plan is that the Energy Council and the European Parliament should give their consent to this new programme in time for it to start at the beginning of next year.

THERMIE will cover a wide range of energy technologies including most renewable energies and energy efficiency technologies, as well as clean coal combustion and hydrocarbon projects. These technologies will certainly have a key role to play in assuring the Community's energy future and preserving its environment. They will also be of benefit to other countries outside Europe, particularly in the Third World where the Community has cooperation and technology transfer programmes. I have no doubt that companies, universities, and all those working in the Community in the energy saving field will find that THERMIE provides a valuable new impetus to, and support for their pioneering activities.

In addition, the launching of THERMIE proves that the Community in conscious of tomorrow's problems and is ready to take its responsability.

A POLICY OF ENERGY EFFICIENCY

SPEECH OF HIS EXCELLENCY THE SECRETARY OF STATE FOR ENERGY

NUNO RIBEIRO DA SILVA

The aim of the Common Energy Policy in Portugal for the period up to 1995 is a 20% saving energy consumption. If this is accomplished, it will represent :

- An annual saving of at least 2 million tons equivalent of oil (14 million barrels), corresponding to something like Esc. 45bn at today's prices.
- A consequent drop in the emission of CO2 into the atmosphere of around 6 million tons annually.

Such an increase in energy efficiency will have repercussions in the balance of payments and will lead to improvements in the quality of the environment ; there will, moreover, be an increase in the competitiveness of the economy in general.

To these results would have to be added the internal and external effects of these moves to diversify sources, above all those which aim to maximise the use of natural and renewable resources.

These were, and indeed are, the fulcral points in the search for technical and financial instruments for a concerted policy of energy efficiency, set up with the consumer in mind.

The first element which ties these instruments together is the fact that they aim to support operations, systems and sectors which are highly diversified and made up of a large number of distinct, financially limited activities. This is a broad characterisation of the system of energy demand, a system requiring not only special attention but also a framework for the unavoidable "confrontation" with the supply side.

The complementary nature of the various instruments should also of course be mentioned :

Firstly, as already mentioned, they open the door to all forms of rational association of the three most important components of a logical use of energy in the widest sense :

- the management of energy at the level of the company or the region ;
- the conservation of energy in the widely differentiated systems used by the consumer ;
- the diversification of sources of energy with all those possible forms available for its use and transformation.

Secondly, within the purview of these instruments, as in no other, we find all those involved in economic activities which it is really important to mobilize, from central and local administration to companies, cottage industries and services.
The only exception here is the domestic consumer, who of course demands a very different type of action.

Finally, the new instruments contribute even more to efficient and continuing support at all stages of the prjects, beginning at R. D. & D. or in studies of project potential, continuing through the legal framework and feasibility studies and ending at the point of incentives to investment.

But perhaps the most important of the aspects referred to here is the fact that the new instruments contribute overall to providing a reply to many of the questions which are raised in a continuing policy of energy efficiency :

- A more exhaustive study of the resources of the country, including not only renewable energy but also the potential of economy of energy at end-user level ;
- Diffusion of tried and tested energy technology and useful equipment into all areas of production and use of energy :
- Increase in production and quality of equipment, systems and energy services ;
- Development of decentralised means of electrical energy production with a resultant drop in the costs and thereby the creation of profit potential at local or company level.