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### **TRENDS AND CHANGES IN THE EUROPEAN ENERGY SITUATION**

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# **MASTER**

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## TRENDS AND CHANGES IN THE EUROPEAN ENERGY SITUATION

### INTRODUCTION

It is a privilege to take part in the Offshore Northern Seas 11th International Conference, and to be invited to contribute to this energy seminar on the trends and changes in the European energy situation.

I bring to this task the perspective of a member of the European Parliament's Energy, Research & Technology Committee since 1979, and Vice-President since 1984. Before that I spent 20 years as a mining engineer in the British coal industry.

When I began my mining career, coal, at least in the U.K., appeared to have an unlimited future. It was generally accepted by geologists that oil and gas would not be found in any significant amounts in the North Sea. A prominent British politician had claimed that Britain "was an island of coal, surrounded almost entirely by fish".

When I joined the Energy Committee in the European Parliament in 1979, in the wake of the oil crises and at a time of rapidly increasing oil prices, the main thrust of European energy strategy was to reduce oil imports, cut dependence on imported fuels and promote energy saving. In the 15 years since then the emphasis has gradually changed. The main policy issues have moved in the direction of environmental considerations. Increasing concerns with respiratory illnesses are likely to push health considerations more to the fore. It is expected that a report to be published soon by the U.K. Royal Commission on Environmental Pollution will call for stronger measures to reduce air pollution. Among the proposals will be increases in fuel taxes, stronger enforcement of regulations and tax incentives to encourage switching to cars equipped with catalytic converters.

### ENERGY AND SOCIETY

There is an undeniable link between energy consumption and economic growth, and hence the standard of living. Economic development and social progress are closely linked to available energy sources. Within the European Union the least favoured regions are in the worst situation as regards energy. Greece, Ireland, Portugal and Spain have higher than average dependence on imported energy. They are relatively inefficient in their use of energy, and have limited access to interconnected energy networks, especially natural gas.

The relationship between energy and the economy changes over time. Energy intensity (the relationship between energy consumption and GDP) is less in the more developed countries and is not related to energy dependence. However, there is a strong link between annual growth in GDP and the growth in electricity consumption. Electricity intensity continues to increase in line with economic growth.

## ENERGY DEMAND

One must be careful not to overburden an analysis of trends with too many figures. On the world scale, in the 7 years between 1986 and 1992, the biggest percentage increase in production has been in nuclear power (34%) and the lowest in coal (1%). Oil was, and is, the largest single source of energy, accounting for 44% and 41% of the total.

In OECD (Europe), broadly the European Union and the 4 candidate countries for membership, the pattern is similar. Nuclear power is up 148% and coal down 28% in production and 14% in consumption. Again, oil consumption is the largest at 50% and 47%. Dependency on coal is up from 17% to 30%, while that of gas has risen from 22% to 28%. Oil dependency has fallen slightly from 67% to 64%. Overall dependency on energy imports for these countries has remained steady at around 42%.

We must be aware that while the level of political decision making remains essentially with national governments, the issues which need to be addressed transcend national frontiers. Energy markets continue to be organised on a global basis, while such considerations as security of supply continue to be thought out at state level.

## POLICY ISSUES

I do not need to remind you that over the next 25 years it is estimated that the world population is likely to double; the world economy will grow by a factor of 2, and possibly even 3; global energy demand will grow, especially in South and East Asia; and the number of motorcars in the world will double.

Energy demand within the European Union is expected to show steady, but unspectacular, growth at around 1% per annum. This is an average figure. Demand will clearly be higher in the poorer countries to which I referred earlier. Higher than average demand can also be expected in regions which have, as yet, no natural gas supply. Demand will also be boosted by the ageing population in the Union, as the number of people over 65 doubles

from some 10% to around 20%. All the indications are that the bulk of the increased demand for energy is likely to be met by fossil fuels. To any who would question these projections, I would simply point out that half the present population of the world does not have access to a commercial energy supply.

With such a scenario it is essential for the European Union to examine such questions as the dash for gas in electricity generation, the predominance of oil in the transport sector, and the role of nuclear power. The primary fuel sources for electricity generation and the growth rate in transport are key issues which will require much greater attention than has so far been accorded to them.

The growth of gas in electricity generation has not yet developed to the stage where it shows up strongly in statistical terms, but the trend is very clearly set, particularly in the U.K. No new coal-fired stations are planned and with the exception of Sizewell B nuclear station, which will shortly come onstream, all planning and construction is based on gas. Britain is moving from a position of energy self-sufficiency to one of dependence at a faster rate than any other member state in the Union.

In the battle to replace coal, gas has benefitted from a British failure to exploit clean coal technology, the use of which would have substantially reduced the environmental advantages of gas. In recent weeks, the U.K. Director of the Inspectorate of Pollution has called for the abandonment of coal-fired power stations in favour of gas. This view clearly challenges the hopes placed on the £450 million IGCC coal-fired plant which is now under construction at Puertollano near Madrid. This project is supported by 8 European electricity utilities and the European Commission. The declared aim is to find a way for coal to meet environmental targets and win a bigger share of the market for fuels in electricity generation.

Studies also show that in the transport sector gas has strong advantages over petrol and diesel fuels. So far only Italy has moved significantly in the direction of natural gas use in the transport sector, but given the availability of gas and the environmental targets that have been set, plus the lack of technical problems, this could well be an important change in the next decade.

I am in no doubt that gas is all set to become the fastest growing energy source. Alongside such a change there could be a growth in coal and oil gasification, in order to reduce the impact of gas imports.

Yet another twist in the environmental equation relates to the future contribution of the nuclear power industry. The current situation is quite clear; France, alone of the E.U. member states, is likely to maintain its nuclear capacity over the next 25 years. Thus, as the older nuclear plant is decommissioned, the environmental benefits in terms of pollution by oxides of nitrogen and particulates will reverse. At some stage it will become impossible to continue to reduce the level of emissions, and pollution will again begin to rise. In this context, it is worth noting that *Climate Change Convention* does not say anything about what happens after 2000 A.D. These emission problems would still be a factor, even if the increase in demand for energy is less than current predictions.

### THE EUROPEAN RESPONSE

The main thrust of European activity in recent years has been the promotion of energy efficiency and savings. The THERMIE and SAVE Programmes have spearheaded this, backed by an increasing research budget allocated to non-nuclear and renewable energies. One of the objectives of the SAVE Programme is to reduce energy intensity by 20% in the period 1986-1995. So far only a 12% reduction has been achieved and the objective will not be reached. It must be noted that despite these efforts, and the undoubted application and attention to energy management in the home and in industry, the level of total energy consumption has continued to rise. The most effective means of achieving energy saving still appears to be in higher prices, but I am not convinced that this is the same as improving energy efficiency.

The European Commission has also moved to persuade governments to accept common rules for the internal energy market in gas and electricity. These did not meet with enthusiasm from many sections of the industry, governments or the European Parliament. The proposals have now been amended, but do not appear to be nearing agreement in the Council of Ministers. Without going into the details of the issue, two points seem to me to be important. In the first place, the proposals to promote networks in gas and electricity are only useful in the context of integrated energy markets. Secondly, it is necessary to find a means of ensuring the public service missions of the utilities, without blocking the freedom of exchange of energy between member states.

More controversially, the Commission proposals for a carbon/energy tax have made little progress. They still have to be considered by the European Parliament, where there is concern on the part of a good number of members that such a move would give a boost to the nuclear industry. Broader support may be available for an energy tax without a carbon element.

Recently, and linked to the Delors White Paper on employment, the Commission has proposed an extension in the network of electricity grids and gas pipelines. These are aimed at contributing to the targets of greater economic and social cohesion within the Union. Connections will be encouraged between isolated and main networks, which will be helpful to peripheral regions. Community supplies of gas will be strengthened by the emphasis on connections with Russia, the Middle East and North African sources. The completion of such networks would bring electricity and natural gas into free circulation within the European Union. The proposals will be amongst the first items of new business to be placed before the Energy, Research & Technology Committee, following the recent European Parliamentary elections. All the evidence suggests a warm welcome by Parliament and Council.

### THE EUROPEAN ENERGY CHARTER

I would summarise my thoughts so far by emphasising the importance of developments and trends in electricity generation, transport fuels and energy efficiency measures. These are technical questions. On the political front, the biggest change in the next 25 years may well be the effect of the European Energy Charter Treaty on the supply side. The Commission has had in place for some time a key programme in international energy co-operation. There are already 14 Energy Centres in Eastern Europe. The effect of an energy market from the Atlantic to the Urals, and beyond to Central Asia, is the most exciting prospect. The European Energy Charter has an importance in developing new geopolitical relationships between the European Union and Eastern Europe, North Africa and the Middle East. It is my conviction that within the Charter Treaty lies the key to economic advance for East and West.

I am aware that Norway has reservations on the Charter Treaty, which are the subject of negotiation. It is very much the wish of the European Parliament that these negotiations will result in Norway being fully involved in the Treaty implementation.

CONCLUSION

There is one energy form that I have left to the end, and that is the energy of our people. Our inventiveness, our capacity for research, our ability to develop new concepts: these energies are unlimited. Harnessing them is the driving force behind the European Union. Energy strategy is an important element in the integration process within the Union. There is much that Norway can contribute to this process. It is the hope of the European Parliament that very soon Norway will be a full member of the Union. This conference centre could have an important role to play in being the host to many meetings which would help to develop political thought and co-operation within an ever-widening union of people.

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