

THE SHELL LECTURE 1985

ECONOMICS
DEPARTMENT

***CHANGES IN WORLD
ENERGY MARKETS***

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International Energy Agency*

SURREY ENERGY ECONOMICS CENTRE

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I am pleased to be with you today. I am looking forward to describing for you some of the broad issues which we are considering today in our Agency. I would also like to have your reactions and your questions at the end of my talk. I am particularly happy to be addressing a group of economists who give special attention to energy matters. I believe that the relationship between energy policy and overall economic policy is as strong as ever, and that the IEA's work must, more and more, include sophisticated assessment of the evolution in the markets for energy.

I would like to cover four topics this evening before turning to your questions: **first**, a discussion of some of the key economic issues which I see emerging in our work; **second**, a look at the broad energy market; **third**, a review of the oil market situation as we see it; and finally, some comments on other energy markets.

Energy Policy and Economic Policy

In the 1970s, the link between energy and economic policy was clear and direct. Twice during that decade, the energy situation reached a point where sudden and sharp price increases were possible. The consequent effects on overall economic activity were dramatic and are well known. Energy policy concentrated on insulating our economies from such shocks through improvements in energy efficiency as well as diversification of sources – both of geographic sources of oil, as well as sources in the overall energy mix.

Conservation and diversification are still the foundation of energy policies in our countries, but a number of new issues have arisen as well, many of which have a strong economic component. Environmental concerns now take a much higher priority. Trade in energy products has been of major political concern, as demonstrated at the meeting of IEA's energy Ministers this past July.

I see two areas in particular where I believe more detailed economic analysis will be important, and I would be interested in your views on these subjects. The first area is analysis of the effects of declining oil prices on energy markets as a whole. On the demand side, this work must address the effects on competition among fuels in each sector. Though we continue to conduct a great deal of **macro**-economic assessment of overall energy trends, we find that an understanding of the **micro**-economic trends is essential. Let me give an example. Some user markets are locked to one fuel or another – electricity for lighting and motor power, or petroleum for automobiles. In other markets, two or more fuels are in competition – both in the short run, as well as the medium to long term. In the industrial market for steam and heat, for example, dual-fired boilers have become more common. These consumers have become quite sophisticated at switching from gas to oil and back, depending on the short-term prices which are available. In the medium to longer term, intense competition also takes place in this market between coal, oil, gas, and even electricity for some special uses. Understanding the competitive factors in this and other markets, and the balance between them, has become very important to our long-term energy policy decisions.

In this regard, we find ourselves in a situation where we have to reconcile short-term and long-term aspects. **On the one hand**, our Ministers place great emphasis on price-based competition between fuels and suppliers to provide the resilience in energy markets – to open up new sources, to enhance efficiency, and to diversify the fuel mix. **On the other hand**, there is one outcome to this competition which we would be reluctant to witness, and that is a significant reversal in the current decline in oil's share of the market. There is no evidence for this reversal at the moment. Oil consumption in our member countries is expected to rise only slowly in the next decade or more, and in any event, more slowly than overall energy growth. But should oil prices decline further than we currently expect, there may eventually be a point at which other fuels lose their competitive advantages. We must of course avoid a new overdependence on any one source of energy or any single geographic region. Part of the IEA's job is to understand these trends, and to anticipate changes in energy markets which have implications for policy.

It is certainly no secret that oil prices are currently declining gradually. Questions are naturally being raised on the impact of this slide on energy investment – both on the supply and the demand side. I do not believe that there has yet been a serious erosion of investment in new supply or in conservation. In the oil market, investments in marginal fields are no doubt proceeding more slowly than they were two years ago. But the major investments in oil supply are made by companies which also take a long-term perspective, and which generally share our assessment of the likely market developments over the next ten to fifteen years.

We also must keep track of the trends in investment in coal and gas supply. There is a significant surplus of coal production capacity on the world market, so that we need not worry about secure and reasonably priced supplies for some time to come. But the play through time between declining oil prices and coal and other fuel prices, and the consequent effects on supplies of each are rather subtle and difficult to predict. The IEA is building its capability to assess these questions.

There are of course no simple answers to the competitive situation among these and other fuel sources. One fundamental feature of open markets is their unpredictability, which is not unique to energy markets. The balance between sources will be different in the short, medium, and long term. We must look at each major consuming sector and understand what their behaviour and motivations are. As I have said, oil consumption continues to decline relative to other fuels, and consumers still have strong economic motivations to continue this shift. In any event, these questions must be understood very well before any decision could be considered as to whether or not any policy measures are taken. As in any market, we must be extremely careful before attempting to intervene in the energy markets – this is one lesson we have seen demonstrated repeatedly in the last decade, and again, this is not unique to the energy sector. I do not currently see any serious problems in the competitive situation for energy supply.

I think we have some reasons to be concerned about investments in energy efficiency, though this is also an area in which concrete information is difficult to come by. Investments in energy efficiency improvements are made by millions of consumers and enterprises. One part of the trend in energy efficiency improvement is technological – that is, technological advances by themselves have contributed significantly to the long-term trend in efficiency improvements. But efficiency investments are in the first instance determined by the operation of the price mechanism. Various market research has shown that private consumers have much shorter time horizons than we might like. Recent declines in oil prices – and the consequent softening in other fuel prices as well – seem likely to have more significant effects on consumer decisions than on major supply investments. In a climate of plentiful supply and steady or declining prices, we may expect to see some reversals in consumer choices in automobile fuel efficiency, for example, or in their attention to insulation of buildings, even though these decisions will have important effects on energy demand for many years to come. Even industrial energy users often take the short-term view. There are indications that conservation investments must meet the same criteria as for other investments, and that this is often a two or three year repayment of the investment through energy savings. As I said, these concerns are for the time being based more on anecdotes than on representative data. But they must be cause for concern among energy policy makers.

The second area of economic analysis which has become increasingly important in energy policy is the economic factors which are bringing about changes in the structure of oil and other energy markets. Let me give two examples. The markets in which oil is traded internationally have undergone a deep shift. Competition now takes place on many more levels than in the past, between producing countries, producing companies, trading and transportation, refining countries and companies, and finally among retailers of all types – including financial institutions. The structure of oil trade has also changed, from a predominance of long-term contracts to more emphasis on spot-market trading and other forms of oil trading such as term contracts, net back sales, etc. The motivations of each of the players in these markets is of course different. An integrated oil company with producing, refining, and marketing interests has a very different view of its refining operations, for example, than does an independent refiner, or a company (or country) with only producing and refining interests. This is an area we are following closely.

Another possible example of this kind of analysis is in the electricity industry. Both here in the United Kingdom, and in the United States, the governments have made changes in the last several years in the regulation of the electric utility industry. This has begun to have effects in the United States, where industrial cogeneration and other forms of non-utility production are beginning to have important effects. How will such developments affect electricity costs or reliability? How will it affect the motivations for investment. These questions are largely of national, rather than international importance, but were examined in at least a preliminary way in our recent electricity study.

One final area of economic analysis, which has received increasing attention, is the effect on energy consumption of what I will call structural changes in the economy. The mix of economic output in many of our countries, for example, has shifted from a heavy concentration of such energy-intensive activities as steel-making to activities which use much less energy, such as micro-electronics and service activities. This shift has been most pronounced in Japan and the United States, but it is happening in many other countries as well. This is of course an area which is particularly difficult to predict, but one which also has very important implications for energy demand.

Overall Energy Markets

Let me now turn to the prospects for the energy market as a whole – will total energy needs grow, and if they do, in which market sectors? Of course, we must remember that total energy use in the IEA actually declined for several years, and that 1984 was the first year of significant increase since 1979. But our Member governments now expect steady growth through the turn of the century, though at much lower rates than in earlier decades.

The most recent summary of forecasts from our Member governments and from the IEA Secretariat shows a 1.7 percent increase per annum in total energy requirements through the end of the century, with growth generally higher for the rest of the 1980s than during the 1990s. This rather low rate of growth reflects, among other things, the continuing effects which conservation can be expected to have on energy markets throughout the IEA.

In what economic sectors do our governments expect the fastest growth? By far the fastest growth is expected to be in the industrial sector, particularly in the 1980s. The buildings sector – which includes both private residences as well as commercial activities of all kinds – is projected to grow at the next fastest rate. The transport sector is expected to grow the slowest of all.

What does this projection imply for each of the major fuels? Overall growth will be comparatively slow. Growth in the transport sector will be confined to oil, and certain parts of the industrial and buildings markets will be reserved to electricity because of uses which are special to that fuel. So if there is to be major growth for any of the primary fuels, it can only come through competition among the major fuels, with gains for any one fuel coming at the expense of the others.

We do well to recall that IEA countries still depend on oil as their primary fuel. Oil gained its primacy not only because its price was low for so long. It also predominated because it is simple to use, easy to transport, and can be readily adapted to many different uses. Oil's price has changed; its other advantages remain.

The market share of oil has dropped from 52% in 1973 to 43% in 1984. In many countries, of course, the drop has been even more dramatic. The IEA's current forecast suggests that oil's share will drop to about 34% by the year 2000, provided we continue our policies for diversification.

As we currently see it, the decline in the share of oil which has occurred to date in the IEA as a whole is largely due to increases in the shares of coal and nuclear electricity. Through the end of the century, we expect gas to maintain or slightly expand its market share, while coal and nuclear power each increase their shares at the expense of oil.

But, as I said earlier, there is no guarantee that these changes will take place – our modelling can never be more than an abstract approximation of the competition among fuels. In particular, a continuing downward trend in the market share of oil is by no means a foregone conclusion. I can tell you, however, that our Member governments believe it is still desirable and necessary to promote the move away from overdependence on oil towards the kind of balanced energy mix I have outlined. Fuel substitution and conservation remain high on the agenda.

The Oil Market

Let me turn now to a survey of the oil market. As we all know, there is a surplus in the world as a whole of energy supply available at prices that consumers at all levels are willing to pay. For the time being, this situation creates downward pressure on prices paid to producers. The pressure is strongest in the oil market, but it also exists in the gas, coal and electricity markets. This downward trend is largely the result of the increasing competition which I described earlier. In my view more competition, more markets, more diversification, and more international energy trade are important foundations for economic growth without interruption. However, the relatively easy energy markets today cannot be expected to last forever. Along with most government and industry observers, we at the IEA base our policy decisions on the possibility that the oil market will tighten again during the 1990s, as a result of gradual increases in world oil consumption and gradual decreases in non-OPEC supplies. During the 1990s we may again see increasing vulnerability to sharp oil price fluctuations caused by swings in the demand and supply pattern or by real or potential supply interruptions.

Let me examine the basis for our assumptions that oil markets may be tighter in the 1990s than they now are. First, I emphasize the fact that the market for oil is a world-wide one – increases in supply and demand in one part of the world have an effect on prices and availability in the rest of the world. Second, the decline in oil

demand and the increase in exploration in recent years, both brought about by rapidly increasing prices, have allowed the level of proven reserves to remain largely unchanged or even to increase slightly in some years since 1980. We do not expect this trend to continue.

For example, most analysts expect reserves and production to decline over the next ten years both in the North Sea as a whole and in the United States. We expect total oil production in IEA countries to be on the order of two million barrels per day lower in 1995 than it is now. Oil reserves and production also seem likely to decline in many of the oil exporting countries outside the Middle East, including the Soviet Union. Although production from newly developed oilfields should temporarily offset declines from mature producing areas, long term production declines appear likely. No one knows how quickly these declines will come about, nor to what degree. But just within the OPEC countries outside the Middle East, it is reasonable to expect declines in sustainable productive capacity on the order of nearly one million barrels per day by 1995. The net effect of these developments over time would tend to increasingly concentrate the world's oil supply onto one region again – and a rather unpredictable one at that.

On the demand side, substantially increased use of coal, gas and nuclear – together with continued efficiency gains – is forecast to hold OECD oil demand almost flat. But demand could grow much faster in non-OECD countries. Within ten years, this combination of trends would push world demand for oil toward levels close enough to anticipated available production capacity to produce upward price pressures and restore the conditions of vulnerability which existed in 1973-74 and 1979-80.

The outlines of this argument are familiar to all of us. Like any forecast, this one could turn out to be wrong. In particular, there is a wide range of unpredictability in both directions:

- The oil market could tighten sooner for any number of reasons:
 - efficiency gains may turn out to be slower than anticipated, particularly should oil prices continue to weaken;
 - economic growth may be faster than expected;
 - and costs may turn out higher than expected for fuels which can substitute for oil.

- On the other hand, a number of developments which are possible, though hardly predictable at this time, could reduce the foreseen pressures on oil supply or requirements. These could include major new discoveries, or more rapid development of known reserves in such places as Iraq and Saudi Arabia. Unexpected sluggishness in economic activity could reduce demand below today's forecasts.

However, despite these unpredictabilities, the outlook I sketched a moment ago clearly indicates that real risks remain of a return to the vulnerability to supply disruptions which existed in the 1970s. We do not consider this a prediction, but rather a guide to government policy in an era of relative calm in our energy markets. Changing circumstances may later call for different responses, but it would be extremely imprudent for governments to disregard the signs which can now be clearly perceived.

Oil Prices

The oil market of course continues to play a key role in **pricing** for all energy sources, despite the reduction in oil's predominance. But just as in the exchange markets, there is no such thing as **predicting** oil prices.

Neither I nor the IEA would care to enter into speculation about the likely path of oil prices. There are, however, certain elements that one can address. **First**, the last ten years have demonstrated the basic lesson that it is the underlying trends in the supply and demand for oil which will determine the main direction and level of oil prices. I do not believe there is any technique for intervening effectively against these underlying forces on a medium or long-term basis, since it would require broad agreement in the world at large — including both producers and consumers — to set an artificial price level and, at the same time, to shut in existing production. What would this price be? Which production would be shut in? Such questions have been posed each time that commodity agreements have been discussed. The developments with the tin agreement provide us with a lesson in this regard at this time. On the surface, the recent interventions in the exchange markets might seem to provide a counter example. But we must bear in mind that in **that** case the intervention was undertaken to support a trend which had already been established. There is, in fact, a consensus that such intervention cannot work if the underlying market fundamentals are moving in the opposite direction.

Second, there is no doubt that real oil prices are for the time being on a gradual slide downward, as I mentioned earlier. How long the current gradual decline of oil prices will last is, of course, a major focus of attention for us, as is the effect that it might have, as I discussed at the beginning of my talk. One question currently being discussed in some circles is whether this gradual slide in oil prices might become a "collapse". I consider any discussion of the likelihood or effects of a collapse of oil prices to be speculative under present circumstances. Of course, in any market a rapid drop in prices would raise the question of the speed with which demand would respond, and thus, how long prices would remain low.

Of course, declining oil prices have a negative impact on the financial positions of oil-producing countries, and in several cases aggravates their already much-too-high debt burden. But the oil price decline – or more precisely, declining import revenues from oil sales – is only one factor in the financial situation. Exchange rates, interest rates, protectionism, and economic growth rates in industrial countries must all be taken into account. Whatever the practical outcome of the **Baker proposal**, the debt situation of LDC's is not caused solely – not even primarily – by the oil market situation. On the other hand, solutions must certainly be found for the debt situation for economic and political reasons.

Several developments are important in following this market, and here once again we see the interaction of general economic developments with energy markets. Exchange rate fluctuations have been important to the energy market, as have government monetary policies. The recent decline in the value of the dollar has had a number of effects. For oil importing members of the IEA, importing costs have gone down. If consumer prices follow, we may see a more pronounced strengthening of demand than the decline in dollar prices would indicate. The decline in the value of the dollar will also have clear effects on the trade balances of European countries with respect to the major Middle East exporters. I do not need to speak to this audience about the effects of the dollar's change on the British economy – in fact, I would be interested in your views.

Another development of great interest is whether further evidence emerges from Saudi Arabia of a change in their policy on the pricing of oil exports. The Saudis appear to be following the general trend in oil trade in the last year or two, under which a larger and larger fraction of oil is priced at market levels, rather than so-called "official" prices. I consider "netback pricing" arrangements which the Saudis have initiated to be one of the most important developments in the oil

market in a long time. They provide a great deal of flexibility to both the buyer and the seller to respond to market developments as they arise. These arrangements have evidently been established for only an initial short period, and can be changed and perhaps cancelled depending on what happens in the next few months. They allow the seller considerable flexibility to offer prices which vary according to the conditions in various geographic and sectoral markets.

Our information for October indicates that these new agreements are having an effect. Saudi production has been on the order of 3.8 million barrels of oil per day in October. This is of course a major increase from the two million barrels per day they were producing in August, and it accounts for most of the increase in total OPEC production, which reached about 17 million barrels per day in October. This increase is in part the result of the normal seasonal upswing in demand. But it also reflects how the market mechanisms work in the oil market today.

Another development of importance is the reports of barter deals in which various industrial goods are paid for with crude oil or products. Barter deals are of course not new to international trade. They were early on important in trade with Eastern European countries. They have also been used by various developing countries as a stimulus to investment or as a way of increasing market shares for their products. Barter agreements make the market at large less transparent, of course, which is one reason that certain members of OPEC have opposed their use. In today's trading system, countries are certainly free to negotiate whatever terms for their products that they wish, but we have to ask in each case what their value is, either to the buyer or to the seller of oil.

A third development which we are watching is the resolution within OPEC of the requests of certain members for increases in their production quotas or changes in the price settings. I shall not comment on the recent Al-Oteiba interview or Dr Subroto's remarks, since I think it best that we await their December meeting in an atmosphere of calm.

Finally, the oil demand developments next spring will be of primary interest. We currently anticipate that OECD oil demand in 1986 will be about the same in 1986 as in 1985, and that normal seasonal variations will lead to significant softening in the oil market after the winter demand peak.

While I am on the subject of prices and production volumes, let me raise the question of the contrast between the value of free oil markets and that of stability in oil

markets. We hear a great deal about the desirability of stability in oil markets these days. Indeed, there are clear benefits to both producers and consumers of having a certain degree of predictability in energy markets, for making investment in either new supply or in energy-consuming equipment or buildings. You will have noticed that I place a great deal of value on the free action of prices in promoting the efficient allocation of productive resources in our economies. My question is in just what terms stability can be achieved. I have said that I believe that broad discussions of prices and volumes, with the objective of achieving a common approach, present insurmountable difficulties – what other form can discussions of stability take, in the final analysis? I would welcome your views.

Oil Refining

I would like to comment briefly on another oil market issue which has serious implications for both energy policy and economic policy. Oil refining industries in all major regions of the IEA have undergone painful restructuring in the past five years or more. The primary motivation for closings and renovation has been the spectacular decline in the demand for oil products, particularly the heavier fuel oils. And despite significant closings, refinery utilisation is still only about 70% in our Member countries, with little prospect for increased demand for several years. On top of this adjustment, several new refineries have now opened or will open in the next few years in the major oil-producing countries, particularly in the Middle East. These refineries justifiably seek export markets.

It is useful, by the way, to point out that the expansion of refining capacity in the Middle East is certainly not the primary cause of the difficulties within IEA member countries. Between 1984 and 1988, for example, refining capacity in OPEC countries is expected to increase by two million barrels per day, of which fully one million will be for internal consumption.

The discussions in the IEA have arisen because of variations between our major consuming regions in their treatment of oil product imports. The markets of the United States and of the European Community currently have essentially no restrictions to the import of refined products. In each of these two cases, though, there are strong pressures to introduce such restrictions. The Japanese market, however, which imports important quantities of many refined products, is closed to gasoline and restricted for kerosene.

IEA Ministers have therefore agreed, and I quote, "to pursue expeditiously a common approach whereby they would maintain or create conditions such that imported refined products could go to the markets of the different IEA countries and regions on the basis of supply and demand as determined by market forces without distortion". This agreement underlines the common reliance of IEA countries on competition among producers at various levels of the market to achieve the most efficient activity in our economies. It represents a political agreement whose practical outcome will depend on the policies to be pursued in each Member country. The IEA has developed a procedure to monitor the factual developments. In this regard I welcome the recent announcements in Japan of proposals to liberalize imports.

Coal Markets

It would be unusual if I did not make a few remarks to a British audience about the coal markets. The overall situation for our Member countries is of course quite different than in the oil market. Coal production within our member countries is nearly equal to coal consumption, though there is of course a substantial and growing trade among them. **Reserves** of coal are substantial, and the great part of these reserves is competitive on the world market. The problems which existed in the early '80s in the expansion of coal export capacity have been overcome, and there is now ample room in both the production system and the transport system for substantial increases in coal consumption.

I hardly need to point out to this audience, though, that there are important variations from one region of the IEA to another. Australia and the United States have substantial, low-cost coal reserves. These are being developed in a generally open and competitive market situation, though there are still significant internal **economic** barriers in both countries in the regulation of transportation costs.

In Europe on the other hand, the situation is different for many geographic, historical, and social reasons, particularly in the United Kingdom and Germany. I welcome the efforts which are underway in your country to make the coal industry viable economically.

As the coal industry expands, and particularly as coal **trade** expands, there is more need for economic analysis along the lines which I discussed at the beginning of my

talk. The competitive position of coal varies from one region and sector to another. We need a better understanding of the cost structures in various producing countries, in order to foresee likely developments in prices, in trade, and in consumption. I welcome studies on such subjects which are under way in Britain and elsewhere. IEA is undertaking its Third Review of World Coal Markets in the next year, and we will address these and other areas.

Other than price competition, the major constraint on the expansion of coal use is environmental protection. The acid rain issue is one of the most sensitive and controversial which we face in energy policy. Within the IEA we have had long and difficult debates, since the perceptions of this problem vary greatly among our member countries, and many of them have important domestic imperatives which leave them only little room for manoeuvre in international discussions. I believe we can – and must – resolve this debate in a way which provides protection for the environment **and** which does not unduly disrupt the economics of the energy markets.

Electricity Markets

Let me now turn briefly to the electricity market. Earlier this year the IEA completed and published a major review of electricity policies in our Member countries. I would like to highlight a few of its findings and recommendations.

First, the relationship between growth in electricity demand and gross domestic product, which had seemed steady for many years, has now changed. In most IEA countries, growth in electricity demand has been lower than before 1973. The major changes which are taking place in the composition of industrial output and of household behaviour, which I mentioned earlier, have significant implications for electricity demand. As a result, established relationships between growth in electricity demand and in GDP have been broken and new ones are still emerging.

In our study, we show a very wide range of plausible future electricity demand. But the analysis makes one thing clear – with even very modest economic growth, demand for electricity in IEA countries by the second half of the 1990s is likely to be significantly higher than today, probably rising by between one-and-a-half per cent and three-and-a-half per cent a year. New electricity generating capacity – including an important share for nuclear power – will be needed by the 1990s, for at

least three reasons: to meet rising demand, to replace old generating units, and to reduce overall generation costs. I do not share the view that there is no need for additional electricity generating capacity, nor do I believe that our member countries as a group can dispose with any of the major generating sources.

The second point I would like to make concerns electricity trade. Our analysis suggests that an expansion of electricity trade between European countries would be useful. It would reduce consumption of oil, would reduce costs by optimising systems over a wider area and would improve security of supply.

In particular, we confirmed that in the 1990s there will be a considerable surplus of nuclear generating capacity in France. Electricity imports could help to reduce oil-generated electricity in Italy, the Netherlands, Portugal and Spain. As you know, the cross-Channel link has recently been opened between France and the United Kingdom and will provide at least the possibility for nuclear electricity in France to flow to England. Across Europe, expansion of nuclear energy and coal as substitutes for oil depends on the building of new power stations. However, relatively few generating stations are under construction or have been authorized. This is in part the natural result of much slower growth of demand. But regulatory problems have delayed construction in some countries, as has public opposition to nuclear and coal-fired generation. In Europe, the effects of these delays have been felt most severely in Italy, where the construction programme for coal and nuclear power stations has experienced important delays, though progress is now being made.

Research and Development

Before turning to the reactions and questions which you will have, let me briefly turn to one other major area of agreement at our recent meeting of energy Ministers: that is, an enhanced collaboration in the field of research and development. Such collaboration has become more important to our members, since research budgets in all parts of the world are not expanding as they once did, and cooperative projects are an effective way to make scarce funds more effective. Sharing scientific efforts is particularly important in the energy area, both because of the importance of sufficient energy supplies to the economy, and because of the long lead times for most major technical changes in either energy supply or demand.

The Ministers made several points about the priorities in energy research and development. Nuclear energy has been by far the largest sector of energy research, and it is time for some of this emphasis to shift to other sectors. Areas of possible international collaboration include the clean use of coal, and advanced drilling and exploration techniques. There is also much to be gained by expanding the exchange of research results and other technical information. It was agreed that the IEA should play an important role in monitoring developments in technical fields of mutual interest, and in some cases in initiating collaboration.

Conclusion

In conclusion, let me reiterate that the main lines of IEA energy policy goals for the near future have been confirmed at our recent Ministerial meeting. They are:

- continued preparation against supply interruptions
- increasing energy efficiency
- increasing indigenous energy production
- a more balanced mix of fuel supply
- a strong programme of energy R & D, and
- reconciliation of differing national interests through international co-operation.

They are accepted and supported by IEA countries as the right basic energy policies with which to face the future. We must ensure that their implementation continues despite the present easy oil market conditions. If we want to avoid another crisis situation some time in the future – and I am **not predicting** a crisis – we must, through our comprehensive energy policies, concentrate on better functioning of all energy markets and less reliance on any single source of energy.

