European Community

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INFORMATION NOTE

ENERGY REQUIREMENTS AND NUCLEAR POWER IN EUROPE

Leonard Williams, Director-General for Energy, Commission of the European Communities, prepared the following address for delivery to the 18th Annual Conference of the Canadian Nuclear Association in Ottawa on 12 June 1978.

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1. The formation of energy policy in the European Community, as in most other countries in the world, takes place against the background of an assumed "energy crisis".

It is important to avoid misunderstandings about what is meant by this. Clearly energy supply now poses very few problems; oil is abundant and energy prices are relatively stable. But this apparently comfortable position is deceptive; not only does the threat of political (and hence oil supply) difficulties in the Middle East remain with us, but we also face a more serious longer term situation. This is that unless we take strong anticipatory action now, rapidly mounting pressure on limited world oil supplies will during the middle of the 1980s begin to have a serious effect on oil prices in real terms. Some figures illustrate this prognosis. Current world demand for OPEC oil is about 30 mbd (million barrels per day); by 1985, on current trends, it could exceed 40 mbd - an increase of over 30 per cent. Some statistics relating to the world's largest oil exporter, Saudi Arabia, point to the same difficulty. Saudi Arabia produces oil far in excess of the financial needs of its investment programme. They have already limited their production to 8.5 mbd. By 1985, the importing countries may be demanding Saudi production of up to 15 mbd. We cannot be sure that Saudi Arabia will be able or willing to produce at that level.

2. I quote these figures for illustrative purposes only. The lesson, however, is clear. Some argue that policy intervention now is unnecessary, in that the laws of supply and demand will act on prices to bring about an automatic oil rationing, and to make economic other energy sources which are presently not competitive. Unfortunately, such an attitude of laisser-faire would only work if large oil price increases could result in new production from new investments in other sources immediately. But the lead times in energy investment are very long; it takes up to ten years to bring a nuclear reactor on stream from the time of initial decision. Typical lead times for deep-mined coal in the U.K. are 5-8 years, those for a deep-water oilfield in the North Sea 4-6 years. Unless we take action now, therefore, to reduce our oil demands and to diversify our energy base, we shall find ourselves having to make very expensive investments in great haste, and in the meantime suffer severe economic and social hardship as a result of higher prices and inadequate availability of energy supplies.

../2

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NR (78) 24
12 June

3. A cardinal principle of the EC's approach to these problems of demand, supply and investment is that they can be better solved through the maximum degree of international cooperation. Energy is a world resource, internationally traded, and vital to the interests of all countries. The nine member states of the EC base their approach to Community energy policy on the belief that they can achieve more through greater internal policy cohesion, and through a united stand on external questions, than they could if they went their separate ways. But we see international cooperation and discussion growing on various levels. The industrialized countries have now come together in the IEA (International Energy Agency) where valuable work is done, and in which the Commission of the EC participates. Bilateral contacts abound; the EC certainly places a high value on its biannual discussions with Canada in which energy plays an important part. The EC is engaged in the Euro-Arab Dialogue, and in similar talks with Iran, in which oil questions play a prominent part. The CIEC (Conference on International Economic Cooperation - "North-South Dialogue"), concluded last year, made a valuable start to the energy debate involving producers, consumers and the oil importing developing countries; it remains to be seen how this initiative will be followed up within the United Nations. As the energy links between the EC and the Soviet bloc become more important, and as the impact of the Soviet bloc's possible future demands for oil imports is better appreciated, closer consultation with those countries may well become necessary.

4. After this account of the international background, I now turn to the Community's own situation. In common with many western countries, prior to 1973 the EC had enjoyed high economic growth based on cheap and abundant oil supplies. By 1973, we had become dangerously dependent on this one fuel, and we were ill-prepared to meet the challenge of the Arab oil embargo. That embargo showed how fundamental energy is to all aspects of economic and social activity. The effects of the price increase are still with us in the form of a prolonged economic recession.

5. In response to the 1973-1974 oil crisis, the EC agreed ambitious resolutions concerning a Community energy policy, the basic aims of which were to:

i - substantially increase the efficiency of energy use and to reduce overall consumption level.

ii - reduce the EC's dependence on energy imports and to increase domestic production from all sources.

iii - bring about a gradual transition from an oil-dominated energy economy towards a more broadly based supply pattern.

6. The Community also laid down specific objectives for 1985, chief of which were:

i - to reduce overall consumption by 15 per cent from the forecast made in 1973.

ii - to increase coal consumption to 355 million tons, and Community coal production to 300 million tons.

iii - to reduce the share of oil in total consumption from 61 per cent (1973) to 50 per cent.

iv - to reduce the Community's dependence on energy imports from 63 per cent (1973) to 50 per cent.

v - to install nuclear capacity of at least 160 Gwe.

../3

In addition, the Community agreed on a number of measures relating to energy conservation, support for the coking coal industry, limitations on the use of oil and gas in power stations, loans for investment in nuclear power station construction, and to an extensive four-year R and D Programme, covering nuclear research and new energy sources. These were complementary to the various but generally wide-ranging policies and measures introduced by the nine member states.

7. The results so far have been mixed, and although the immediate world energy picture may seem reassuring - with no major supply or price problems - the longer-term dangers of excess oil demand pressing heavily on prices remains. So there is no room for complacency.

8. It seems likely that the Community's target for a 15 per cent reduction in consumption by 1985 will be more than achieved, and a 25 per cent reduction from the 1973 forecast is now thought possible. But this in large measure is due to the prolonged economic recession, rather than to the measurable results of energy conservation. The Community also looks likely to achieve its targets for the share of oil and for dependence on imported energy. Both shares currently stand at 54 per cent. The Commission has proposed a 500 million ton oil import limit for 1985, compatible with the overall IEA target for that year. UK North Sea oil plays an important part in this, but will not contribute more than 20-25 per cent of Community demand.

9. On the other hand, the Community's coal targets will be difficult to achieve. It is not proving easy to increase investment in extra coal-burning capacity. The world coal market is relatively small, but imported coal enjoys a substantial price advantage over Community coal, which is normally difficult and costly to mine. Nevertheless, the Community has large-scale coal reserves which will form an increasingly valuable source of internal supply as price relativities change in favour of coal; in the meantime the Commission is pressing hard for the adoption of various coal support measures.

10. The original target for installed nuclear capacity in 1985 (a minimum of 160 GWe) will not be achieved. It is now likely that no more than 80-90 GWe will be in service by that date. This slippage is equivalent to about 100 mtoe (million tons of oil equivalent), and is due to many factors: technical and engineering difficulties, both with the reactors themselves and with the generating plant; reduced demand forecasts, and hence deferment of investment decisions; public opposition to the construction of nuclear power stations, and increasing political debate on the subject; and, in some cases, lengthy planning enquiries.

11. The Commission of the EC has often been characterized as being obsessed with the need to "go nuclear" on a massive scale as fast as possible and without regard to alternatives. Our true position is very simple and it is that we regard the steady development of a nuclear electricity generating capacity as one of the essential components to a balanced energy supply pattern to meet likely future needs. Although nuclear power has been a very important commercial reality for twenty years, present Community capacity of 23 GWe supplies only about 3 per cent of the Community's total energy requirements, and about 10 per cent of our electricity output. These are modest figures and do not indicate a reckless approach. However, looking towards 1990, taking even a fairly pessimistic view about economic growth, and bearing in mind the obvious limitations on coal-burn, the availability of oil and natural gas, and the contribution from new sources, up to 12 nuclear units will have to be ordered each year between now and 1985 if supply requirements are to be met. This in itself will be a major operational challenge to the nuclear industry.

../4

12. The Commission itself is not responsible for nuclear investment decisions, and has no powers in this respect, although it does grant loans for this purpose. Nuclear programmes are the responsibility of member states. But neither member states nor the nuclear industry can act in a way divorced from public and international opinion and obligations. Internally, Governments have a clear duty to present the facts behind nuclear issues to their electorates as objectively as possible, so that public debate may be based on information rather than emotion or prejudice. The Commission of the EC took an initiative in this direction when last November and in January of this year a series of open discussions took place in Brussels on the future of nuclear power. All shades of opinion were represented. Another noteworthy exercise in public examination into nuclear developments was the prolonged enquiry into the proposed nuclear fuel reprocessing plant at Windscale in England. This process was immensely painstaking and the tenor of the evidence was witness to the spirit of objective analysis which the parties to both sides of the argument can display.

13. Externally, the advocates of nuclear power programmes have to satisfy a wide range of international undertakings, whether on a bilateral or multilateral basis. Many uranium suppliers, including Canada and the USA, are insistent on the observation of certain restrictions on the use of nuclear fuel. The Community, in the Euratom Safeguards Control, has an established system of checking on the use of nuclear fuel in all civil establishments, and is close to final agreement on the basis of its relationship to the Inspectorate of the IAEA (International Atomic Energy Agency). The Commission is participating actively in the INFCE (International Nuclear Fuel Cycle Evaluation), now well under way, and which the Community hopes will produce constructive practical results which will do much to solve the questions of nuclear safety and non-proliferation.

14. The Community's attitude towards nuclear power is coloured by its lack of indigenous energy sources, such as fossil fuels and uranium, in comparison with, for example, the USA. This has several consequences:

i - the Community has a more urgent need to build up conventional nuclear power,

ii - the Community needs to pay particular attention to the efficiency of fuel use, and to the conservation of uranium, which is itself a finite resource,

iii - it follows from (ii) that (a) the Commission sees advantage in the fast breeder reactor, which could have a fuel-use efficiency of about 60 per cent compared with about 2 per cent for most light water reactors; and (b) the Commission attaches importance to the reprocessing of irradiated fuel, as a means of fuel recovery and of reducing the waste storage problem.

15. On the fast breeder reactor, the Commission wants work to go ahead steadily, so that reactors of commercial scale are available as an energy policy option in the 1990s, if circumstances require and technical and safety progress permit. Several experimental and prototype fast reactors have been in operation in the Community for some years, and one of commercial size (1200 MW) is now being built.

16. The Commission considers that by the development of a Community reprocessing and recycling strategy, the Community could by 1990 reduce its uranium requirement by 20 per cent, and its enrichment requirement by 15 per cent. These savings are particularly significant when 80 per cent of our uranium supplies are imported.

../5

Reprocessing would be an essential element of a large-scale fast breeder reactor programme; and action in this field by the Community could reduce the risk of other states, not signatories of the NPT (Non-Proliferation Treaty), engaging in reprocessing themselves. The Commission is proposing a high-level study of the possibility for joint ventures in the reprocessing field on a Community basis. The aim would be to avoid duplication to bring about efficient co-operation between fuel processors and users, to extend access to users in third countries, and to enforce the highest non-proliferation standards.

17. The Commission is also proposing an active Community programme in the field of nuclear waste handling. The intention is, on the basis of detailed study and the pooling of information by member states, to establish a Community network of sites suitable for the storage from all member states, and to harmonize national practices and regulations governing nuclear waste management.
