

6. The Energy Issue

6.1 Energy was one of the dominant issues of the 1970s. World attention focused primarily on the four-fold increase in the price of oil in 1973-74 and the doubling in 1979,¹ and on the critical limits to petroleum as a major source of energy. The unforeseen, sudden and sharp increases in the price of oil have created major problems for oil-importing countries. Apart from the effect on costs and prices, they have, as we have noted, created balance of payments problems.

6.2 In Chapter 3 we have emphasised the urgent need for initiating appropriate financial arrangements to provide adequate balance of payments support to oil-importing countries. In the longer-run, however, the solution to the energy problem must lie in increasing its availability through an accelerated programme of exploration and development of all forms of energy and by reducing the consumption of energy per unit of GDP through conservation measures. In this chapter we consider the supply and the conservation aspects of the energy issue.

Investment in Exploration

6.3 Available studies on resource levels of traditional fossil fuels (oil, coal, gas) and of nuclear fuels indicate that though these are of course finite, there are immense reserves that still remain to be proved, let alone exploited. It is widely held that the level of proved reserves of energy has been held down by three main factors. The first is the low price and abundant supplies of Middle East oil until 1973; this militated against any intensive search for other sources of energy, for example coal, or of oil in most importing countries. The second is what many consider to be a misallocation of investment in energy exploration; because of 'political' risks and other influences, too great a proportion of the total investment has been directed away from other

1. By contrast the real price of oil had fallen during the period 1975-78.

promising areas. The third factor is the heightened uncertainty in the energy market and the difficulty in foreseeing the future course of prices of oil and other sources of energy.

6.4 Immediately following the steep oil price increases in 1973, there was a substantial upsurge of investment in the exploration for fossil fuels, particularly oil. But the 1974 level was not fully maintained in subsequent years. Most of the investment took place in the developed countries. This might be considered somewhat surprising since many of the potential oil-bearing sedimentary basins are in the developing countries.¹ It has meant that a higher proportion of the ultimately recoverable oil resources estimated to exist in the developed countries has now been discovered than of those in the non-OPEC developing countries, which remain largely undiscovered. This comparative reluctance to invest in oil exploration in most developing countries also applies to other minerals.²

6.5 Doubtless there are several reasons for this. As with other minerals, exploration for oil is risky in a geological sense and these risks are likely to be greater when drilling takes place in an unknown environment, particularly if the technical and other infrastructural facilities are weak. Higher transport costs have increased the attractiveness of producing nearer to the final market. Above all, there seems to be a view that investment in exploration within many developing countries is 'politically' too risky as the terms of the contract may be varied after oil has been discovered. In view of the expense involved, such uncertainty is believed to have a discouraging effect on potential investors. However, the high geological risk and costs involved in oil exploration make it difficult, in many cases impossible, for developing countries themselves to undertake or commission such exploration.

6.6 There is a need, therefore, for a mutual understanding between the investors and the host government regarding a fair sharing of the gains from

1. It has been estimated that in 1976, outside the centrally planned economy countries, 64 per cent of the potentially oil-bearing land was to be found among the developing countries but that only 28 per cent of the oil exploration expenditure took place in these countries. See UN: *A programme to accelerate petroleum production in the developing countries* (Economic and Social Council, 30 May 1979); and Kamal Hossain: *Law and policy in petroleum development* (Frances Pinter, London, 1979).

2. According to a submission in 1977 to the President of EEC Commission by fourteen mining companies, exploration by EEC mining companies in developing countries had fallen from 57 per cent of their overall expenditure in 1961 to 13.5 per cent on average during 1973-1975.

exploration and development of oil resources. One way in which exploration contracts can be improved is by adopting a tax formula which incorporates the principle of a 'resource rent tax'. Several variations of this are possible. One is a progressive scheme of production-sharing under which the proportion going to the government would increase in accord with the size of output. Another is a share participation arrangement whereby the amount of equity acquired by the host country would vary according to the profitability of the enterprise. A number of countries have recently made contracts incorporating a 'resource rent tax' principle¹ and several more have them under consideration. We believe the wider adoption of the 'resource rent tax' principle in oil and other mineral concession agreements will make these agreements more stable, and thus reduce some of the non-geological risks which are currently inhibiting exploration for energy (and other minerals) in developing countries.

6.7 More generally, we also wish to emphasise the crucial need to construct agreements in such a way that their provisions give the host government overall control over the venture and a substantial share of the ensuing income and profits (through royalties, taxes and dividends) while at the same time attracting sufficient capital, technology and managerial skills to ensure a high level of exploration expenditure and other prerequisites for the success of the venture. At present, it seems that such agreements would probably be of a hybrid nature incorporating elements of joint venture agreements, production-sharing arrangements and service contracts, with a considerable degree of inbuilt flexibility. Eventually, however, the most appropriate form of contract may be one in which the operating enterprise is paid a sum consisting in part of a return on its capital invested and in part of a fee on the services it provides. Meanwhile, more technical assistance should be made available to developing country governments in order that they may be in a position to negotiate more equitable and therefore more stable contracts with energy transnationals.

6.8 We also see a need for host governments to undertake thorough and comprehensive geological and geophysical surveys and assessments of their countries' energy potential before entering into contracts with the energy transnationals. Although energy exploration is much less expensive than energy development (in the case of oil, for example, the ratio is approximately 1:50), it is still relatively costly (say \$2-\$5 million for an oil project). This is especially so when it is, as for most developing countries, almost entirely a foreign exchange cost. Some developing countries would, there-

1. Including the Governments of Papua New Guinea and Tanzania.

fore, find it difficult to finance such operations themselves. In those cases what is required is a mechanism to provide third-party financing. We recognise that such mechanisms already exist and that a certain amount of funding is now available, for example from the World Bank since January 1979. But the size of these funds has been small in relation to the expressed needs (and on present policies is likely to remain so), while the terms and conditions have caused difficulties for the poorer countries.

6.9 Substantially increased funds on easier terms will have to be made available to assist developing countries in energy exploration, particularly for oil. Since it is desirable to avoid the proliferation of institutions, the most appropriate approach may be further expansion of the World Bank's current energy programme. But there is also a case for extension and strengthening of the UN Revolving Fund to include energy minerals and to ease the terms on which repayments are made.

6.10 The funds for an expanded World Bank energy programme and an extended and strengthened UN Revolving Fund would necessarily have to be sought mainly from the developed countries and OPEC. It is obviously in the interest of OECD member countries that energy supplies in oil-importing developing countries should be increased as quickly and as much as possible. This would (a) reduce the potential increase in their import demands from present sources, for example oil from OPEC, and (b) lead to the possibility of new sources of energy becoming available for export, for example oil from Mexico. OPEC members also have an interest in assisting in actions which would (a) take pressure off their own production and thus help to conserve what will become an increasingly scarce non-renewable resource (which is also their main source of wealth), and (b) help fellow Third World countries to accelerate their economic development, especially in heavy industries and other energy-intensive sectors.

6.11 The very much larger sums needed for the energy development stage and the inherently risky nature of many of the processes involved, make it difficult if not impossible for official multilateral facilities to provide a substantial part of the finance required. The bulk of this must continue to come from commercial sources, and the most useful role we see for official multilateral facilities is in providing relatively small amounts of loan capital. In this and other ways, such as ensuring that adequate pre-investment surveys are undertaken, they would act as a catalyst to reassure transnationals and thus encourage them to invest in developing countries.

6.12 Consideration also needs to be given to the even larger financial requirements necessary for adequate development, production, transport and distri-

bution of alternative sources of energy. Apart from oil and natural gas, and as yet unexploited reserves of hydroelectric power, the only alternative sources which are economic on a large-scale with existing technology are coal and nuclear power. Both present serious environmental problems — albeit of a different nature — and further technological work is urgently needed to minimise these hazards. But there is little doubt that most incremental growth in energy consumption in the next twenty or thirty years will have to come from these two sources.

Development of Energy Potential

6.13 Larger research resources are also urgently needed for improvement in the efficiency of exploitation and use of conventional fuels and for the development of new sources of energy. We understand that under present operating conditions over half the global energy available in the reserves worked is lost. Energy recovery efficiency (i.e. the relationship between the amount of primary energy produced and that of the energy reserve worked) varies considerably from one source to another.¹ Given the necessary economic incentives, however, the maximum use of presently available technologies could raise the recovery factor substantially. In the case of the ECE region, for example, it has been estimated that between the mid-1970s and the early 1990s, the average recovery factor could technically be raised from 46 per cent to 71 per cent, although the practically attainable level was more likely to be around 59 per cent.² The sharpest increase could be realised for the scarcest energy resource — petroleum — where the present average of 35 per cent can be raised to 40-50 per cent with the aid of secondary recovery techniques and to 50-60 per cent with that of tertiary techniques. To maximise the petroleum produced from known resources (including such sources as shale-oil and tar-sands) we see the need for greater incentives to make the best possible use of available recovery techniques: as these are usually expensive, financial assistance might be considered for the poorer of the developing countries which are producing oil for their domestic requirements.

6.14 In addition there is a need to foster R & D into harnessing new sources of energy, such as solar energy (whether directly from the sun or indirectly

1. From 80 to 90 per cent for opencast coal mines, 60 to 80 per cent for underground 'longwall' coal mines and dry natural gas wells, to 35 per cent for underground 'room and pillar' coal mines and onshore oil wells.

2. See UN: *Increased Energy Economy and Efficiency in the ECE Region* (Economic Commission for Europe, 1976).

as in the form of wind energy, tidal energy, ocean thermal energy, etc.) and geothermal energy. Research resources are needed both to solve technological problems and to reduce costs of using known technologies. Although these types of renewable energy (unlike hydraulic resources and biomass) cannot be expected to make a significant contribution to world energy supplies before the end of the century, it is essential for assuring the long-term supply of energy that adequate resources are put into R & D in this field. For the same reason, and looking further into the future, research into fusion power should be continued by those nations in a position to undertake it.

6.15 Meanwhile, developing countries are facing a number of vital constraints when they attempt to provide from their own resources the large-scale, often specialised and complex, technologies required for energy supply systems. The chief of these constraints is a deficiency in skilled manpower, particularly of engineering and managerial personnel. From that follow other constraints, for example inadequate information on technologies available and knowledge about the prospects of their future development, a lack of expertise in negotiating for them, an insufficient ability to absorb or adapt received technologies or to develop new ones, and an inadequate capacity to manufacture or in some cases even to service, energy plant and equipment. Technical assistance is required to help those countries overcome these problems.

6.16 We are aware that a significant amount of assistance in the energy field is available from the UN and other multilateral sources, as well as from bilateral sources. Yet there is abundant evidence of need for expanded assistance programmes and for more facilities. We have noted that various proposals have been made to overcome the gaps which exist, but little action appears to have resulted. We can but echo the call of others for the international community to take early measures to assist developing countries to establish or strengthen their energy technology training facilities and R & D institutions.

Energy Conservation

6.17 Energy conservation is a term open to varying interpretations. We have used it to embrace all efforts directed toward reducing the amount of energy consumed per unit of GDP generated. Reducing the energy-intensity of economic growth may be achieved in several ways, including (a) restructuring final demand, (b) changing consumers' energy-using practices, and (c) applying improved technologies for energy production, transport, conversion and utilisation. In a dynamic world these changes are likely to take place

simultaneously in response to the effects of supply/demand factors and/or government policies on price and other means of influencing or determining consumption.

6.18 There are well-known secular and cyclical factors affecting the energy-intensiveness of the economy. On the one hand, countries tend to become more energy-intensive as their economies industrialise, their societies urbanise and the proportion of energy used in secondary or converted form (such as thermal electricity) rises. The newly industrialising of the developing countries are perhaps the best current example of this stage. On the other hand, there is some evidence that countries tend to become less energy-intensive as their economies mature further and the services and other tertiary sectors grow in relative importance. Superimposed on these secular trends is a continuing movement toward lessening energy-intensity which accompanies the general technological progress upon which much economic growth is based.

6.19 Around these secular trends there are cyclical movements which, by affecting the more energy-intensive sectors of the economy (for example steel, aluminium, cement, chemicals and other branches of heavy industry) to a greater degree than the less energy-intensive ones (for example services), can lead to marked changes in the relationship of total energy consumed to that of aggregate GDP generated. Although higher prices for energy have had a significant effect on fuel consumption, cyclical movements in the composition of GDP have probably so far made a larger contribution than higher consumer prices and other energy conservation measures to the remarkable drop in the energy/GDP coefficients registered by OECD countries since 1974.¹ If there is a return during the 1980s to significantly higher economic growth in OECD, these exceptionally low coefficients are not expected to be maintained.² This is mainly because such a return presupposes recovery and growth in production by the energy-intensive sectors.

6.20 Whilst it is widely recognised that the relocation of certain economic

1. The OECD countries' aggregate energy/GDP coefficient (i.e. the average percentage change in their energy consumption divided by the average percentage change in their GDP) averaged 0.9 during 1970-73, when the average annual growth rate of GDP was 4.7 per cent, but only 0.3 during 1974-78, when GDP average annual growth was reduced to 2.7 per cent.

2. Forecasts by the Secretariat of the International Energy Agency for its member countries (which comprise 21 of the 24 OECD countries) are for energy/GDP coefficients averaging 0.84 during 1978-85 and 0.81 during 1985-90, on assumed GDP annual growth rates averaging 4.2 per cent and 3.6 per cent respectively.

activities between countries is a continuing and, indeed, in a dynamic global economy an inevitable process, it is equally one which in general takes a comparatively long time to have significant effects. A rising real price of energy may alter the present optimum location of economic activities, particularly those in the manufacturing sector, in so far as it raises the transport component of costs, especially in the case of coal. For that reason it is possible, and perhaps likely, that a greater part than hitherto of the new production capacity coming into operation in the more energy-intensive sectors during the next twenty years or so will be located in those countries which possess abundant domestic supplies of energy. But this is not to say that we necessarily foresee a substantial and swift relocation of currently installed capacity. Moreover, to the extent that a restructuring of final demand for energy does take place in individual countries through a relocation of certain of their economic activities, this would be of potential assistance to energy conservation only within those countries, although it would help improve global use of a scarce resource. Measures to economise in the use of energy for particular purposes must therefore be continued, particularly (but not exclusively) in the energy-deficit countries. One way in which this can be achieved is through changing consumers' energy-using practices by greater employment of the price mechanism and other regulatory forces.

6.21 We are aware of the various measures taken by member countries of the International Energy Agency (IEA) since 1974 to change consumers' energy-using practices and have noted the conclusions of the IEA Secretariat that those measures which have contributed most significantly to that end were appropriate pricing policies, financial and fiscal incentive schemes, regulations on energy-efficiency standards, and public information and advice programmes. We have also noted the IEA Secretariat's conclusion that those member countries which had experienced the largest increases in energy prices and in other respects had the strongest conservation programmes had been those in which the amount of energy consumed per unit of GDP had diminished most, and that the strength and comprehensiveness, and therefore the effectiveness, of the various national programmes had differed considerably.

6.22 We believe particular attention should be paid by governments to implementing a more appropriate pricing policy for the consumption of energy, especially of petroleum products, and that those countries, such as the United States, in which prices are currently restrained by domestic controls should take early action to effect decontrol (or where that is already scheduled, to accelerate the process). Prices of all energy products paid by domestic consumers should at the very least reflect the world market price

of supplies of the marginal fuel (at present oil) and the cost of transporting, converting and distributing those products to the user. Such a pricing policy is essential for a better allocation of scarce energy resources. An active fiscal policy (for example the imposition of excise duties) may well be necessary to achieve that end. These conclusions are applicable to all countries, including oil-exporting countries. In the case of certain items of importance to the poor in developing countries, such as domestic grades of kerosene (vital for cooking and lighting), a transitional period of adjustment may well be necessary, although this should be kept as short as possible.

6.23 A second major area of conservation policies is setting and enforcing regulations on energy-efficiency standards. These are particularly important in the transport sector. We suggest mandatory fuel economy standards, of the type operated in the United States,¹ should be adopted immediately by other countries and made progressively more stringent in their application. Standards also have a valuable role to play in the residential sector. We consider they should be a mandatory part of the building regulations and also be applied to all domestic electrical appliances.

6.24 Lastly, there are the public information and advice programmes on energy conservation. These are especially significant in the industrial sector, where the technical possibilities are more complex than elsewhere. Particular emphasis should be given to such aspects as optimising patterns of fuel utilisation (for example the replacement of oil by other sources of energy).

6.25 As a means of enforcing energy conservation, we also see considerable merit in indirect actions such as the oil-import targets adopted by IEA member countries since October 1977 and made more stringent by the monitoring provisions and national allocation procedures agreed at their December 1979 Ministerial Meeting. Such arrangements should be continued and consideration given to extending them to major oil-importers among the developing countries² as part of a global energy policy to which we draw attention in the concluding section of this chapter (see paragraph 6.36).

6.26 Given that fossil fuels are a depletable and increasingly scarce resource, each of the above measures is applicable to all countries, whether developed or developing, energy-surplus or energy-deficit. In practice, the mere fact that

1. These include mandatory fuel-efficiency standards for passenger cars manufactured after 1977, progressive taxation of car manufacturers if their models fail to reach specified mileage standards, and mandatory speed limits.

2. For example, Brazil, Korea, Turkey, Taiwan, India, Philippines, Thailand, Cuba, Singapore.

the developed market economy countries account for over half of the world's consumption of commercial energy and for almost two-thirds of its oil means that, *prima facie*, the scope for energy conservation should be much greater in those countries than in the developing countries, where civilian, or at any rate household, consumption is generally small and in most cases used for purposes vital to their industrial or agricultural production and distribution. Yet if the prospects of energy conservation in the developing countries through a lessening of the energy-intensiveness of their economies, or of an elimination of inessential use, are comparatively poor, the relatively inefficient use made of much of the energy consumed means that the scope for conservation through technical improvements is very much greater. It is to this aspect that we now turn.

6.27 Although the efficiency of energy technologies has been improving for generations, scope for further advance by applying known techniques and developing new ones is still vast. We have already drawn attention to the scope for increasing the efficiency of energy recovery at the primary production stage (paragraph 6.13); opportunities are even greater further along the chain. Although the relative efficiency of use of energy varies significantly from one country to another, depending on such variables as the proportion of primary energy converted into secondary forms before use (for example thermal electricity), estimates suggest that in most industrialised countries over a quarter of the primary energy produced is lost in conversion into secondary energy and in distribution, while a further two-fifths is lost in transforming the delivered energy into useful energy. Overall, it appears that around five-sixths of the caloric content of exploited deposits of primary sources of energy is lost on its way into final use: around one-sixth of this loss occurs at the extraction stage and four-sixths at the transport, conversion, distribution and utilisation stages.¹

6.28 In absolute amounts, the biggest single loss in the industrialised countries has been in energy conversion and distribution. The main reason is the widespread and increasing conversion of primary energy into electricity, where the average net thermal efficiency of generating stations is currently only about 32 to 35 per cent. On a proportionate basis, however, the greatest loss has occurred in the transport sector, where around 80 per cent of the delivered energy is lost in transformation into useful energy. By comparison the loss in the industrial sector has been estimated to be a little under half and that in the residential and services (commercial and public administration) sector at rather over half.

1. For further details see, for example, UN (ECE), *op. cit.* and Fred Roberts: *The scope for energy conservation in the EEC* (Energy Policy, June 1979).

6.29 We do not propose to list here the many technical possibilities which might lead to savings of energy, both within the energy industry itself and in other sectors of the economy. These have been the subject of extensive study elsewhere¹ and in any case their applicability varies according to individual circumstances, such as comparative fuel costs. Increasing public awareness of the progress of energy technologies, and the ability to acquire, absorb and supply them, will demand not only greater efforts by national governments but also increased international cooperation of the type we have mentioned earlier (paragraph 6.16).

6.30 Estimates of the expected size of energy savings per unit of GDP achieved by restructuring final demand, changing consumers' energy-using practices and applying known energy technologies vary from source to source and from one time horizon to another. A study² undertaken for the Conservation Commission of the World Energy Conference, for example, estimated that by 2020 global savings in the ratio of energy demand to gross world product might be 46 per cent compared with 1975: 29 per cent of this would be derived from improved technological efficiency and the remainder from structural changes in energy use (including conservation policies) and in the world economy. Shorter-term estimates, by other sources, suggested savings of one-third for the ECE region between the mid-1970s and the early 1990s³, and 10-15 per cent for IEA countries between 1975 and 1985 if they were to follow vigorous and systematic energy conservation policies.⁴ Studies of particular countries have often come to quite startling conclusions. One has demonstrated in great detail how the United Kingdom could increase its GDP two- or three-fold between 1976 and 2025 and at the same time consume 22 per cent and 8 per cent respectively less primary energy in 2025 than in 1976. In doing so it would still be making use only of currently known and demonstrated technologies.⁵ Another has concluded that "with sufficiently high energy prices over the next few decades, the

1. See, for example, the proceedings of the World Energy Conferences (especially the *Report of the Conservation Commission of the Tenth World Energy Conference* held in September 1977) and Gerald Leach et al: *A Low Energy Strategy for the United Kingdom* (IIED Science Reviews, 1979).

2. L.Nevanlinna and F. Kommonen: *Report on Energy Conservation for the Conservation Commission of the World Energy Conference*, 1979.

3. UN (ECE), op. cit.

4. Statement by Ulf Lantzke, Executive Director of IEA, to *OECD Economic Observer*, November 1979.

5. Gerald Leach et al., op. cit.

United States could double the efficiency with which it uses energy without significant adverse effect on economic growth".¹

6.31 We have not been able to assess the validity of these statements. We are, however, aware that their fulfilment will depend in large measure on the vigour with which governments apply conservation policies, facilitate and promote the transfer, assimilation and application of existing technologies to raise energy efficiencies and stimulate the development of new technologies. Greater international cooperation as well as national resolve will be needed to achieve that end.

Need for a Global Energy Policy

6.32 Given the level of energy resources, and assuming the investment of adequate resources into energy exploration and development as well as into R & D for new technologies, the actual amount of energy supplied will still depend ultimately on the production policies followed. The long gestation period between the start of energy exploration and that of production, transport and distribution, which is often of the order of a decade or more, means that, in broad terms, the upper limit of global energy production during most of the 1980s has already been set by past decisions on exploration and development.

6.33 But the uncertainties engendered by the change in institutional framework of the major oil-exporting countries during the late 1960s and first half of the 1970s, and by the divergent perceptions of different interest groups (including environmentalists and conservationists), meant that the expansion of investment in the world energy industry which should have been generated by the 1973-74 oil price rises did not occur to the extent needed to diversify and extend sufficiently the global energy base. The market economy countries remained too dependent on Middle East oil, while most centrally planned economy countries became increasingly reliant on Soviet oil. At the start of the 1980s several major oil-exporting countries cut production,² whilst it was known that Saudi Arabian output was at a rate significantly above its desired ceiling. Many commentators see OPEC oil production rising only slowly during the 1980s and perhaps not at all during the second half of the decade. Other, more pessimistic, projections indicate that its

1. United States National Academy of Sciences: *Energy in transition, 1985-2010* (US Department of Energy, Washington, January 1980).

2. Examples include Libya, Kuwait, Iraq, Iran, Venezuela.

production will never again exceed the 1979 level.¹

6.34 The reasons for what some see as a fundamental change in OPEC production policies are diverse and complex. There are economic factors, such as the reluctance to exchange an appreciating asset (oil in the ground) for a depreciating or frozen one (dollar deposits and investments abroad) and the desire of some governments to preserve as much as possible of their oil-wealth for the benefit of future generations. There are also complex social and political factors which tend to reinforce these economic considerations.

6.35 On the economic side we see an urgent need to devise a mechanism to protect oil-exporters' revenues invested in the West. We have proposed such a mechanism in Chapter 3 and suggest urgent attention be given to this and other possible mechanisms. Otherwise it is possible that OPEC will cut oil production to such an extent as gravely to imperil the economic growth of its customer nations.

6.36 The solution of all these problems is not possible without acceptance of a global energy policy. Such a policy must have, as its centre-piece, an accommodation between the oil-exporting and oil-importing countries. This accommodation would involve commitments by both sets of countries: by the major oil-exporting countries to agree not to reduce supplies arbitrarily unless circumstances are beyond their control; by the major oil-importing countries to hold oil-imports to ceilings below those agreed by IEA member countries, and to set and monitor strict conservation standards on the consumption of energy in its main end-uses (particularly that of petroleum products), with penalties to be applied where such standards are not reached; and by both oil-exporting and oil-importing countries to set real prices of crude petroleum and petroleum products in such a way as to avoid unpredictable and sudden, sharp increases, but at levels which give incentives for increased production as well as encouraging greater conservation. In addition, a global energy policy will have to incorporate a mechanism to effect greater investment in the exploration, production and transport of energy with present technologies – particularly in the production of petroleum and of nuclear energy within the present energy-deficient developing countries – as well as in R & D into new technologies for the production, conversion and utilisation of energy – especially that of renewable sources.

6.37 The opportunity presented by the UN Special Session on Development should be taken to instil into all parties the necessity of joining forces in

1. See BP Policy Review Unit Brief: *Oil Crisis Again?* (September 1979).

order to transform a potential energy crisis into a new opportunity for co-operation in the global interest. A concordat is needed between the industrialised countries (both market economy and centrally planned), OPEC and other developing countries in order to implement a global energy arrangement. But we wish to emphasise that such a concordat is possible only if it forms part of an agreement on the broad range of issues in the North-South dialogue.