



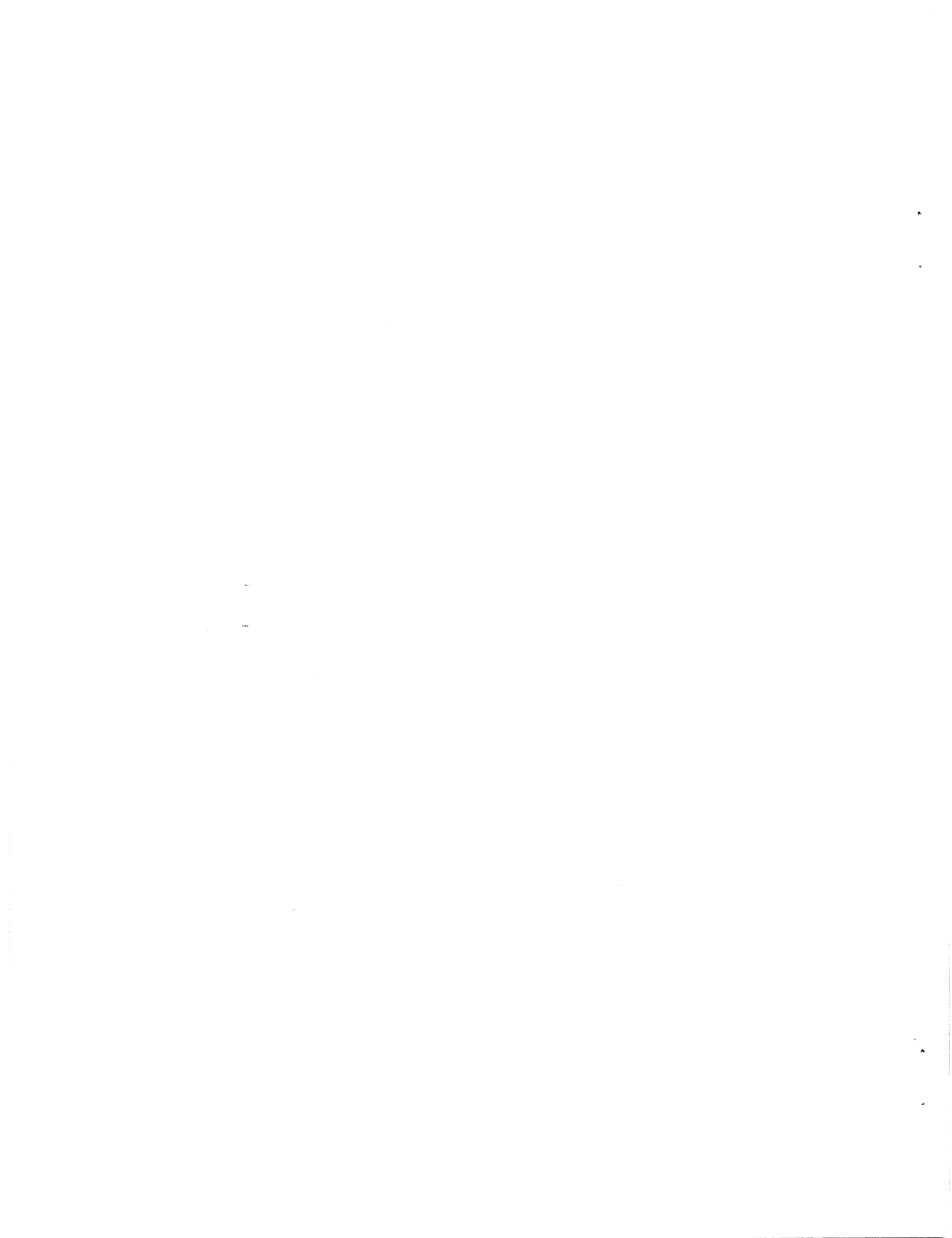
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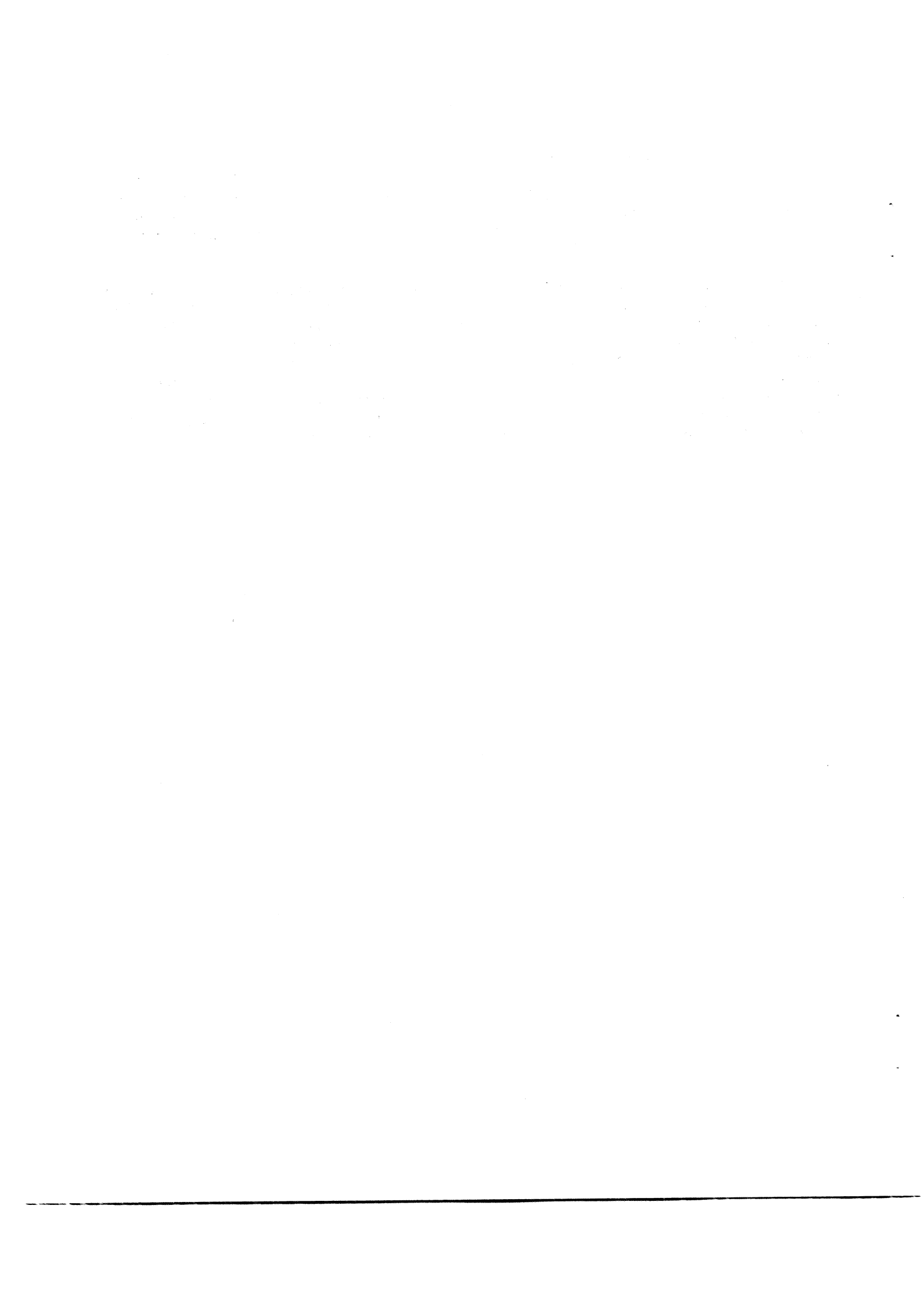
**THE IMPACT OF CHANGING CONDITIONS IN THE OIL MARKET
ON ENERGY POLICIES IN THE
ESCWA REGION**



Foreword

The present study has been prepared in fulfilment of programme element 1.2 of the energy in Western Asia programme of the Economic and Social Commission for Western Asia (ESCWA) programme of work and priorities for the biennium 1988/1989. Its aim is to examine energy issues of major concern to the region, particularly changes in the oil market, fluctuations in oil prices and their impact on energy plans and policies.

This study is also intended to serve as a background document for the ad hoc expert group meeting organized to discuss salient energy issues arising from recent developments in the oil market. It has, therefore, been designed to deal with downstream and upstream activities, adjustments to contractual terms and market and national energy policies following the violent fluctuations in oil prices. Some futuristic views on the oil market are also presented in this study which concludes with some remarks for the consideration of the national and regional entities involved in energy issues and with the development of oil resources in the ESCWA region.



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Introduction and background

In spite of the development of non-conventional and renewable sources of energy, in which nuclear energy and hydropower have an important role to play in meeting the demand for energy, modern economies still depend heavily on oil to satisfy the different needs of the industrial, agricultural, domestic and other economic sectors.

It is not surprising, therefore, that changing conditions in the oil market and subsequent fluctuations in oil prices were major factors in the creation of instability and uncertainty in the world economy.

The sharp rise in the price of oil which marked the period 1973-1979 was followed by another period of fluctuating prices at much lower levels. In 1983, oil prices fell from 34 United States dollars (\$) to \$29 per barrel. The trend towards falling oil prices continued until prices reached their lowest level of \$9.64 per barrel around mid-1986, before rising again to current levels.

The collapse of oil prices in 1986 coincided with other energy-related developments. On the supply side, oil prices were affected by the increase and development of the market share of non-OPEC oil-producing countries. On the demand side, the effects of energy-efficient investment, policies and measures for saving energy, together with interfuel substitution, were significant factors in the decline of the market share of oil in many countries throughout the world. It should be noted that the adoption and implementation of national energy policies aimed at securing a higher degree of energy independence and more diversified energy import led to a decrease of the share of oil in primary energy consumption from 48 per cent in 1973 to 38 per cent in 1986.

The 1980s, or at least the period from 1981 to 1986, witnessed a serious disequilibrium in the world economy, with a general weakening in world economic development.

In many oil-producing countries, fluctuations in oil prices created a difficult economic situation in the long run. At a time of soaring oil prices, important revenues, and in some cases considerable sums of surplus money, were poured into the budgets of these countries. Several Governments used large amounts of revenue for ambitious, large-scale economic and social development projects. A significant portion of the accrued revenues was allocated to subsidy programmes.

As oil prices started to decline, these Governments experienced enormous difficulties in continuing their development projects and maintaining subsidy programmes. Some of them found themselves in such an intractable situation that they had to borrow money to finance their on-going development projects and meet their subsidy requirements.

The repercussions of these fluctuations in oil prices are particularly crucial for the ESCWA region. According to recent figures, the share of the ESCWA region represents around 21 per cent of world crude oil production. The region also holds over 57 per cent of world oil reserves. Moreover, many ESCWA countries depend for their economic and social development on a single and exhaustible commodity (oil). Because of the diversity of ESCWA countries in terms of energy resources, however, the effects of changing conditions in the oil market vary greatly from one country or from one group of countries to another. Taking this fact into consideration, the countries of the ESCWA region may be divided into three main groups: first, those with large petroleum resources that have become major oil exporters; secondly, those that are self-sufficient in energy and which, in some cases, have a significant exporting capacity; and thirdly, those deprived of significant energy resources and which remain net importers.

Nevertheless, irrespective of the great differences in their petroleum resources, the dramatic changes in the oil market and the violent fluctuations in oil prices have had a considerable effect on all the ESCWA countries.

In the case of oil-producing countries, lower oil prices have resulted in a serious shortfall in income. New development projects have been curtailed and imports have been reduced in many countries of the ESCWA region. For most of these countries, the loss of oil income has been the origin of substantial budget deficits.

Financial assistance provided to other countries in the ESCWA region, whether in the form of loans, aid or grants, had to be reconsidered. On top of this, there was a considerable decrease in the amount of workers' remittances sent from the major oil-producing countries to other countries in the ESCWA region. This curtailment of income had serious recessionary and adjustment effects.

Most ESCWA oil producing countries have, therefore, adopted policies and initiated programmes to adjust to the changed international oil situation in order to maintain the pace of economic and social development and secure their ever increasing financial requirements.

For its part, the Organization of Petroleum Exporting Countries (OPEC) has intensified its efforts to deal with the unstable situation in the oil market. It began by adopting a strategy of supporting oil prices through reducing its members' production. A ceiling was therefore set and production quotas were instituted. Initially a ceiling of 17.5 million barrels a day (bbl/day) was set on production. This was then reduced to 16 million bbl/day. A further reduction to 15.8 million bbl/day was agreed upon by OPEC members in 1987. However, this ceiling rose to 16.6 million bbl/day in 1988 and 18.5 million bbl/day in the first half of 1989, reflecting the concern of the oil-producing countries about the decrease in their oil revenues.

In its efforts to stabilize oil prices, OPEC also lowered the official price of marker crude oil. Initially the price was lowered from \$34 per barrel to \$29. Another reduction to \$27 a barrel was agreed upon in July 1985. Furthermore, OPEC has sought close co-operation and co-ordination with non-OPEC producers.

The Organization of Arab Petroleum Exporting Countries (OAPEC) has been particularly concerned with regional strategies and policies within the framework of close co-operation and co-ordination among Arab oil-producing countries.

As a substantial number of oil-producing countries in the Arab world are still totally dependent on oil, which constitutes the greatest material wealth of the region, OAPEC has directed its efforts towards devising a comprehensive strategy for oil resources development ranging from exploration and prospecting to production, transportation, distribution and consumption.

Within the context of an instable oil market and taking into consideration the fact that the international oil industry is facing an uncertain future, the present study attempts to address a number of important issues concerning the most relevant aspects of energy policies in the ESCWA region.

The multiple aspects of these issues and the fact that the ESCWA region provides almost 40 per cent of the world's crude oil exports, require, however, a clear definition of energy policies envisaged in this study.

In the ESCWA region, energy policies cannot be confined to measures and decisions relating to energy conservation, the development of alternative sources of energy and appropriate pricing systems at the national level, though because of their importance and the growing concern towards them shown by many countries, due consideration is given to these aspects in this study. The scope of energy policies in this region is much wider, encompassing areas of a regional and global dimension. More importantly, oil policies in particular have world-wide implications for economic growth, technological advance and social development.

Of course, the vital role of oil, especially oil revenues, emerges here as one of the main factors, if not the major factor in many cases, in the formulation of energy policies in the ESCWA region.

But ESCWA countries are members of OPEC, OAPEC or both. Therefore, the decisions taken and recommendations agreed upon by these two organizations are often determining elements in the orientation of the policies of these countries.

The crucial issues highlighted in this study relate directly or indirectly to those aspects of energy policies that are aimed at expanding and diversifying the activities of ESCWA countries in the development of their oil resources and securing a market position that is commensurate with their weight as major oil producers. National plans and policies and the promotion of non-conventional, alternate and renewable sources of energy are also discussed. This study also reviews the trends in the oil market and future options.

I. PROMOTION OF PROCESSING ACTIVITIES AND INVOLVEMENT IN DOWNSTREAM OPERATIONS

The world petroleum industry is currently undergoing fundamental change as a result of successive oil shocks. But, now that the ESCWA countries are in control of their oil resources, they are directly concerned with both the origin of this change and with its implications, although external shocks are still major factors in the marketing policies.

However, their control over oil resources is incomplete and often vulnerable unless downstream activities and market outlets can be acquired.

Nevertheless, great efforts have been made in several ESCWA countries to reduce the degree of vertical integration of multinational corporations in the oil industry which dates from the early years of its development. But the dramatic changes in the oil market, the volatility of oil prices and serious implications for the economies of the ESCWA region have increased the awareness of the importance of downstream investments, so often advocated by experts involved in the development and management of oil resources at the national and regional levels.

In this respect some clarification is needed to avoid giving a misleading interpretation of ESCWA countries' policies for promoting the development of processing activities and investments in downstream operations, particularly in refining.

A. Contribution of the ESCWA region to the world refining capacity

The world refining capacity rose from 25 million bbl/day in 1960 to around 60 million bbl/day in 1973 and some 8 million bbl/day of additional refining capacity was under construction. At the same time, the utilization of refining capacity increased from 89 per cent to 94 per cent. However, by 1980 the utilization of world refining capacity fell to 75 per cent as a result of a substantial decrease in the demand for oil and the expansion of refining capacity. At present, the refinery surplus is estimated at 20 million bbl/day in spite of the scrapping of obsolete and less efficient refineries in many countries.

At first sight, therefore, the current trend of expansion in refining capacity seems to overestimate the absorptive capacity of the market. Such an assumption is irrelevant, however, in the sense that it fails to take into account the basic considerations behind the strategy of the oil-producing countries, which is to introduce an element of stability into the world market and to compensate as much as possible for the loss of revenues resulting from the cheap price of oil, since refining adds value to every barrel.

1. Downstream investments

Until recently, the size of investments of ESCWA countries in downstream activities was insignificant, particularly when compared with their oil potential and their position as major oil-producing and exporting countries. In a pertinent publication,^{1/} the former Secretary-General of OAPEC indicated that gross downstream investments in the OAPEC area, in terms of fixed assets, represented 3.11 per cent of world downstream investments in 1946 and increased to only 3.79 per cent in 1975, while downstream investments in Western Europe and Japan increased "many-fold" during that period. Significant changes that have contributed substantially to the increase in refining capacity in the region have occurred since then.

2. Changes in the markets and developments of refining

After 1973, it was realized that refineries in the ESCWA region were not suited to the new realities of the world demand for petroleum products or to the changing export market. While there was a considerable decrease in the demand for heavy distillates, there was some increase in the demand for product mix and a sharp rise in that for middle distillates. More flexible refineries were therefore needed to meet demand in the domestic products market and to strengthen the capabilities of the ESCWA region to export refined products. As a result, the development of refineries has been oriented towards flexible processing that use sophisticated and highly advanced technologies.

The achievements in the ESCWA region in this field over the last fifteen years or so have indeed been impressive. According to recent figures, the total refining capacity of OPEC countries reached 7.7 million bbl/day in 1987. Compared with the refining capacity in 1983, this figure represents an increase of 1.5 million bbl/day in the Gulf States alone.

The refining capacity of ESCWA countries stood at 2.2 million bbl/day in 1975, while crude oil production was 20.2 million bbl/day. The ESCWA region produced 26 per cent of the world's crude oil, but was able to refine only 3.4 per cent during 1975. Refining capacity has increased substantially in absolute terms since then: in 1988 it was 4.1 million bbl/day. However, ESCWA capacity still accounts for only a small portion of the total world capacity. By 1985, owing to increases in production by countries outside the region, ESCWA countries accounted for 16 per cent of crude oil production. The refining capacity of these countries increased slightly, but it still only accounted for about 5 per cent of total world capacity. By 1988, ESCWA countries were producing 21 per cent of total world output, but their refining capacity had reached only 5.6 per cent of total world capacity. This discrepancy is even more pronounced when total oil exports are compared, as the ESCWA region provides almost 40 per cent of world crude oil exports.

^{1/} Ali A. Attiga, The Arabs and the Oil Crisis 1973-1986 (Kuwait, Organization of Arab Petroleum Exporting Countries (OAPEC), 1987).

In spite of the relevance and validity of the above observation, some examples of the progress made in the ESCWA region are worth noting. In Saudi Arabia, refining capacity was expanded through the establishment of joint ventures. This resulted in an increase of the country's refining capacity from about 1.2 million bbl/day in 1983 to almost 2 million bbl/day in 1986. Kuwait does not rely on joint ventures. This country, however, has considerably up-graded its refining capabilities during the 1980s. Recent studies state that the Kuwait refining sector will probably emerge as the most advanced refinery complex in the world. Kuwait has also purchased downstream assets in refining and marketing in western Europe in an effort to secure a market for some of its crude oil. Kuwait began acquiring downstream assets in Europe in 1983, at a time of falling world demand. By 1986, Kuwait was capable of processing over four fifths of its crude oil in its own refineries at home and abroad. The country now owns two refineries in Europe, in addition to a network of petrol stations. According to some estimates, Kuwait can now sell up to 250,000 bbl/day of refined oil products in Europe, and this figure is expected to double when new acquisitions are added. Kuwait's domestic refineries now produce about 700,000 bbl/day of oil products.

In Egypt the trend is also towards the expansion of refining capacity and increased production of downstream petroleum products for domestic use and for export. This trend constitutes an important element of the country's long-term investment strategy to accelerate the rate of growth of the national industrial sector. Refining capacity in Egypt increased from 200,000 bbl/day in 1970 to over 440,000 bbl/day in 1985. Recent estimates indicate that this capacity could exceed 770,000 bbl/day by 1990.

With regard to downstream activities, it is worth noting that expansion strategies differ significantly from one ESCWA country to another. Kuwait, for instance, adopted a strategy aimed at entering directly into downstream activities and developing or purchasing assets on its own, while Saudi Arabia opted for a joint-venture policy. Saudi Arabia's strategy in this regard is similar to that of the major oil companies, which enter into joint ventures with large concerns that have important refining and marketing agglomerations.

Whatever the case, both countries have succeeded in meeting their domestic needs for petroleum products and reducing their dependence on crude oil exports.

In spite of the significant progress and success achieved in developing and up-grading processing and refining capabilities, it is widely admitted that the co-ordination of refining and marketing strategies is still one of the most pressing issues faced by oil-producing countries. OAPEC has played an important role in promoting co-operation and co-ordination among its members, and a permanent refining committee was established in 1976. The viability of downstream activities depends on the existence of a collective approach based on close regional co-operation and co-ordination in downstream investments and marketing operations.

B. Transportation policies

Special attention has been given to the development and expansion of oil and gas transport systems in the ESCWA region.

In 1988, the capacity of pipeline systems in the ESCWA region exceeded 7.24 million bbl/day. Recent expansion in the pipeline systems of a number of countries made a considerable contribution to the increase and improvement of this capacity.

The current plans and projects being undertaken in several countries of the region are expected to increase the capacity of pipeline systems by more than 2.7 million bbl/day. By 1990, the region's oil export capacity through pipelines is expected to reach about 10 million bbl/day.

Significant progress has been made in improving other systems of oil transportation, mainly in tanker fleets and trucking facilities.

By 1988, the total tonnage of the ESCWA region stood at more than 6 million dead-weight tons (d.w.t.). Although this is lower than the figure for 1987, this was owing to the reflagging of ships during the Iran-Iraq conflict. This apparent decrease does not represent any real loss to the region of fleet capacity. Total dead-weight tonnage may increase now that hostilities have ended; any increase will more accurately reflect the situation in the region.

Some ESCWA countries also rely on trucks to carry oil. Iraq made extensive use of trucks for international oil transport during the hostilities. According to a recent announcement, however, trucks are no longer employed to transport oil. Following the end of hostilities, Iraq's pipeline capacity has been increased, and oil is now transported by pipeline or tanker.

The use of trucks for the internal transport of oil is very common in many countries of the ESCWA region, but no reliable figures on the region's fleet of trucks are available.

In its efforts to promote regional co-operation in downstream investments (which requires large amounts of capital, modern management techniques and markets), OAPEC has succeeded in identifying investment opportunities for joint corporate companies. Thus, the Arab Maritime Petroleum Company was established in 1972, followed by three other joint companies. This is a significant achievement, since it allows the pooling of resources in joint undertakings aimed at enhancing regional co-operation and facilitating the penetration of markets.

If these objectives are to be attained, intensive efforts and great determination on the part of the ESCWA region and other Arab countries will be required. Much closer co-operation and co-ordination of joint national efforts are still needed, not only in the field of investment, but also in operational policies.

To the detriment of the ESCWA region and other Arab countries, nationalistic tendencies are still more or less prevalent. With regard to investment priorities and oil transportation policies, there is still a marked disparity between joint and individual efforts. In spite of the fact that the countries of the ESCWA region and other Arab countries now have full sovereignty over their oil resources and tankers, it is difficult for them to take advantage of their strong position and to face the adverse conditions in the market.

The prospects of downstream investment depend largely, if not entirely, on the extent of regional co-operation and the degree of co-ordination of national efforts.

II. RECENT DEVELOPMENTS IN UPSTREAM ACTIVITIES

Compared to non-fuel minerals, petroleum was thought to be immune from market forces. Many thought that the cycles affecting the prices of mineral commodities such as iron ore, copper, tin and nickel had no effect on petroleum. The decline in oil prices, which was accompanied by unexpected, dramatic effects, has reversed this opinion. The large excess of production over demand, on the one hand, and the difficulties faced by OPEC in controlling oil prices on the other, have created an unstable and uncertain situation in the oil market which has an unpredictable effect on both oil-producing and oil-consuming countries.

The decrease in oil prices and the unstable and uncertain market have already influenced the strategy of many countries. Exploration and development activities have been considerably reduced and new projects have been curtailed or simply shelved. Petroleum enterprises have been severely affected and many have had to reconsider their current and planned operations.

At present, oil companies are reported to have embarked on the largest retrenchment exercise since the collapse of oil prices in July 1986. Cuts in upstream operations are accompanied in many cases by the restructuring of exploration and production business. Notably, the reduction in exploration and production activities by the oil companies has resulted in considerable job losses.

The new orientation of oil companies reflects a marked shift in oil-exploration strategies. In 1986, following the collapse of oil prices, the oil companies reduced their oil exploration activities by one third. Another important element, price competition among oil-service companies, made it possible for the oil companies to achieve significant savings. Upstream costs have now risen by a fifth compared with the low level of 1986.

The cornerstone of the oil companies' strategy is lower costs. But concern for the environment is affecting the entire structure of the petroleum industry. Only those oil companies flexible enough to comply with environmental regulations and cope with the higher taxes on the use of hydrocarbons will be able to survive. Some estimates indicate that the number of integrated oil companies could halve by the year 2000.

Exploration slack is also felt in the ESCWA region, particularly in mature areas. With the exception of a number of countries such as Yemen, Democratic Yemen or Oman, little interest is shown in spending in other parts of the region. The use of highly advanced technologies has contributed to the discovery of more reserves than the traditional techniques used in seismic and drilling operations.

If the trend of declining oil prices continues, it is very unlikely that the present exploration slack will be reversed. This slack is explained by the trend towards upgrading oil and gas reserves. Recent figures cited in specialized periodicals indicate that Saudi Arabia upgraded reserves at the end of 1988 to over 252 billion bbl of oil and over 177 trillion cubic feet (ft³) of gas, compared with previous government estimates of 170 billion bbl of crude oil and 146 trillion ft³ of gas. Reserves have also been upgraded in Iraq, Kuwait and the United Arab Emirates.

But, in spite of the curtailment of seismic and drilling operations and increasing interest in upgrading existing reserves, exploration activities are still being undertaken in several parts of the region, though on a limited scale.

In Yemen and Democratic Yemen, a number of relatively significant discoveries have been made. Exploration activities have concentrated mainly on the border zone between the two countries.

The two countries have now established a joint exploration company to undertake activities in the neutral zone where several international ventures have also been invited to seek concessions. It is expected that concessions can be allocated in 1989. Exploration operations are also being carried out in certain areas of Yemen. A number of international oil companies are taking an active part in these areas.

In Democratic Yemen, exploration and discovery operations are continuing and foreign oil companies are also involved in these operations. The Government of Democratic Yemen puts reserves at 3.65 billion bbl, but has not indicated whether these are proven reserves.

Exploration and production activities are also being undertaken in Oman. Intensive exploration operations carried out by National Petroleum Development of Oman, in collaboration with a major oil company, have resulted in an increase in oil reserves from 2.5 billion bbl in 1982 to 4.1 billion bbl, according to recent figures. It seems unlikely that large oilfields will be discovered in Oman, and present discoveries appear small in comparison with those of the oil-rich countries in the region. Consequently, government policies relating to operating and tax systems tend to promote the development of small reservoirs. However, the prospects of discovering larger deposits in the unexplored northern and offshore areas of Oman are quite promising.

The example of Oman is very interesting. As a recent issue of a specialized periodical has indicated, the strategy of Oman, which consists of a combination of mature acreage where small finds can be profitable, higher risk areas and flexible government policies, has attracted many international oil companies. At present, at least eight international companies have concessions in Oman. According to official sources, in 1989 Oman is planning to spend around \$70 million on oil exploration, \$18 million on gas exploration and about \$50 million on seismic operations.

In another development, some major oil-producing countries of the ESCWA region seem determined to step up their production and exploration operations outside the region. Kuwait, for instance, is reported to be producing about 20,000 bbl/day of oil in Western Europe and America, and also has a stake in some South-East Asian countries where it is involved in joint ventures.

Some experts question the rewards of such policies on the grounds that overseas oil may be ten times more costly to produce than oil produced in the region.

The countries involved in overseas operations appear to be trying to produce oil for nearby markets and strengthening their position in the world petroleum industry. This is thought to keep oil prices constant in real terms.

The situation with regard to natural gas exploration and development is also interesting given the growing world-wide interest in natural gas.

Exploration and an assessment of gas resources in the region has revealed the significant potential of several ESCWA countries. In addition to countries that produce associated gas, recent discoveries have confirmed the existence of important natural gas reserves in Qatar, the Syrian Arab Republic and Egypt.

The benefits to be obtained by several countries in the region from the development of their natural gas potential are incontestable. The use of natural gas to meet domestic energy requirements can reduce oil imports or increase oil exports considerably. In oil-producing countries with limited reserves, the exploitation of natural gas can play a major role in maintaining the pace of current economic development and helping to meet the requirements of the infrastructure established during the period of abundant oil revenues.

The Syrian Arab Republic and Egypt are self-sufficient in energy and have sufficient capacity to export oil. Both countries are reported to have significant natural gas reserves. The development and exploitation of natural gas for domestic consumption will help to increase their oil exports.

On the other hand, the development and extensive exploitation of natural gas can form a major component in the region's strategy to diversify energy resources when in several countries oil is still the only energy source for export as well as for domestic use.

With regard to environmental considerations, as natural gas is sulphur-free and has less carbon dioxide, it is a more desirable source of energy. The expected increase in the demand for gas is therefore another sound reason for promoting investment in the gas sector.

According to recent estimates, Arab countries could possess the equivalent of almost 80 per cent of world oil reserves in natural gas reserves. Significant progress has been achieved in overcoming the problems of flaring associated gas. At present, natural gas is exploited for the generation of energy, and the production of fertilizers and petrochemicals. Natural gas is also liquefied for exportation in a number of Arab countries. Many experts are of the opinion that if the implementation of gas projects can be maintained at the current rate, the region will achieve optimum utilization of associated gas.

However, many issues and problems related to the development and exploitation of natural gas have to be resolved. The high cost of transporting and distributing gas is a major obstacle to the development of natural gas in the region. Although there are plans to build pipelines and to develop other transportation facilities, intensive efforts in terms of investment and technological advances are still needed to overcome these constraints.

Another problem concerns the price of gas, which should be in proportion to its importance as a major energy source and an input to various industries, as well as its depletable nature.

Given the fluctuations in oil prices, the heavy dependence on oil and the depletable nature of both oil and gas, the time has come for ESCWA and other Arab countries to think seriously of formulating the principles of a regional strategy for the exploitation of their natural gas resources.

III. ADJUSTMENTS TO CONTRACTUAL TERMS

As was pointed out earlier, the continuing changes in the oil market have significantly affected the strategy of the petroleum industry throughout the world.

The impact of the uncertain oil market and unstable prices on investment decisions in oil exploration and production is one of the most crucial issues faced by policy makers in developing countries. On seeing its cash flows reduced and subject to increased risks, the petroleum industry now takes a more cautious approach to expenditure on exploration and development. It goes without saying that the extent to which the petroleum industry is ready to invest in such activities depends on geological perspectives and the contractual terms agreed with the host countries.

A. Negotiation of contractual terms

The major issue in this respect is how to reach agreements that can secure the full sovereignty of Governments over their energy resources and achieve maximum benefits for the countries concerned, while at the same time provide terms that can help the petroleum industry to offset the negative effects of lower prices. In other words, the need to reconcile the exigency of the petroleum industry for flexible contractual terms and the need to observe the national interests of host Governments is still a prime issue in the promotion of the development of energy resources.

The major concern of companies is to achieve high yields through low-risk activities. In the case of countries with limited financial resources, the volatility of oil prices considerably affects their negotiating power. These countries, eager to develop their natural gas resources, compete among themselves to attract potential investors in exploration and prospecting.

Oil-importing countries in the ESCWA region that produce no significant quantities of oil or have no important proven reserves are now faced with enormous, perhaps insurmountable difficulties, in undertaking exploration operations through international sources. Unless there is close regional co-operation to provide the required resources, these difficulties will continue as long as changing conditions in the oil market and fluctuations in oil prices persist.

Even in the case of oil-rich countries or those with highly promising reserves, the need for modern technologies, know-how and expertise often makes negotiations with the international petroleum industry difficult in a period of declining oil prices, particularly when this industry is concerned with high and immediate returns.

B. Types of contract

There are several types of contract and agreement mechanisms. The most common forms are concession/investment agreements, service contracts and joint venture arrangements. They are now concluded in various hybrid combinations.

It is not within the scope of this study to discuss in detail the terms, advantages and disadvantages of exploration requirements, financial arrangements, revenue-sharing and remuneration, development obligations and the transfer of technology. Suffice it to say here that the region now has well developed national oil companies which in many cases possess significant important financial resources and are involved in the world petroleum industry. Adjustments, therefore, would appear to be easier.

C. Contractual difficulties

Numerous problems and difficulties arise between host Governments and oil companies following the discovery of oil in commercial quantities.

Disagreements may occur about the definition of commerciality. In most cases the oil companies tend to interpret this in their favour. This is the reason behind the willingness of host Governments to include a clear definition of commerciality in the contracts. However, the need to attract international oil companies often weakens the bargaining position of developing countries.

IV. MARKETING POLICIES

As has been indicated on several occasions, fluctuations in oil prices have dominated the course of the ESCWA region's economy throughout the 1980s and have altered the magnitude and structure of the national development plans of most of the countries in the region.

Given the vital role played by oil in the economic and social development of ESCWA countries, oil marketing policies appear to form major components of these countries' overall development strategies.

Marketing policies in the ESCWA region depend, however, on the ESCWA countries' position within OPEC, on the role of the latter in the world market, the income needs of oil-producing countries, the depletable nature of oil and the importance attached to its conservation.

A. OPEC production and pricing policies

ESCWA members of OPEC accounted for 55 per cent of total OPEC production in 1989. A review of OPEC production and pricing policies and its recent market position constitute the most relevant indicator of the development of the marketing policies of ESCWA countries.

A decade ago OPEC played a major role in the energy market. Since then, its role in the energy market has diminished. World recession, the shift to other sources of energy and the success achieved in the field of energy conservation have all contributed to a one-fifth reduction in the oil consumption of the 24 countries of the Organization for Economic Co-operation and Development (OECD) in 1985 compared with the figure for consumption in 1979. OPEC, therefore, has tried to increase its share in this shrinking market.

By 1982, the above-mentioned considerations and the increasing capacities of non-OPEC countries had had a considerable impact on the market position of OPEC, and the demand for OPEC oil began to fall sharply. OPEC lowered its bench-mark price and introduced new production quotas. But few OPEC countries complied with these decisions either in terms of output or in terms of prices. The level of spot prices plunged below official prices. However, the fall in spot market prices did not result in an increase in the demand for oil. An alternative pricing system, netback prices, was introduced by a number of OPEC countries. But the desired level of demand was not achieved and oil prices continued to fall, reaching a nadir in mid-1986. But, even during that period, OPEC output only increased from 17.2 million bbl/day to 19.4 million bbl/day between 1985 and 1986, though the increase was a little higher in terms of net exports. In 1988, while average prices were less than one third of 1981 prices, OPEC countries exported 40 per cent of world oil (excluding the centrally planned economies), compared with 66 per cent in 1976. In contrast, oil production in non-OPEC countries continued to increase or declined only slightly. In 1986, OPEC introduced a new system of government-administered prices and production quotas. This, perhaps, was one of the main reasons why relative oil-price stability at the level of \$18 per barrel was achieved.

According to the most recent agreements reached in mid-1989, ESCWA members of OPEC, as a group, are allowed 51 per cent of total OPEC output. There is no change, therefore, in terms of the percentage allowed to ESCWA members of OPEC in the first half of 1989. In absolute terms, however, quota levels have increased for OPEC as a whole, as well as for ESCWA members of OPEC as a group.

One of the main difficulties faced by OPEC in the oil market is that it has a spare capacity of 8-10 million bbl/day. In the opinion of many oil-marketing experts, these difficulties could be overcome by increasing demand within less than a decade. In fact, this argument is based on recent figures published by the International Energy Agency and other bodies involved in energy issues, where the demand of OECD countries for oil is estimated to have increased by 1.7 per cent in 1987 and 2.8 per cent in 1988.

To a certain extent, the effectiveness of the role of OPEC depends on the impact of low prices on the volume of production of non-OPEC countries. Some analysts believe that the Gulf members of OPEC can make a profit even at the price of \$3 per barrel, while in some other countries, each barrel of oil costs more than \$12 to bring to market.

Another indicator that supports this opinion is that non-OPEC oil producers raised their output by one fifth between 1979 and 1986 as a result of high prices. The level of production could fall dramatically in the event of another collapse in oil prices. In 1985, the oil production of the United States fell by 9 per cent. Some believe that there will be a substantial decrease in the output of non-OPEC countries in the 1990s.

This argument can hardly be sustained. In 1986 the major oil companies outlined the devastating consequences for the petroleum industry of a decline in oil prices to a level below that of \$15 per barrel. However, in 1988, when the price of oil plummeted to \$12 a barrel, the major oil companies continued to prosper. Furthermore, since 1986, the production of non-OPEC countries has increased by a further 3 per cent.

OPEC, realizing that its policies of setting both price and production levels are unlikely to achieve the desired objectives, is now attempting to change its approach, particularly after the major oil-producing country abandoned its role of swing producer. Currently, the main concern of OPEC is to make its members comply with the production quotas. OPEC now accepts that prices should be left to market forces in the hope that a rise in the world demand for oil will facilitate an increase in production and profitability and strengthen its position in the world oil market. It goes without saying that the success of this approach will depend on the willingness and determination of OPEC members to honour their production quotas. Fear of not being able to achieve these objectives explains why a number of OPEC members, mainly the major oil-producing countries, have turned to downstream integration.

B. Income needs of oil-producing countries

Meeting revenue needs is a crucial issue, if not an actual dilemma, in the marketing policies of oil-producing countries in the ESCWA region. The main reason for this is that the income needs to meet only the operating and maintenance costs of the existing infrastructure, built at a time when large

foreign currency reserves were available, have reached such high proportions that, as a result of falling oil prices, severe revenue shortfalls have hit most oil-producing countries in the region. Any increase in production would lead to a further decline in oil prices, while higher prices would affect the demand for oil and further weaken the market position of the oil-producing countries of the region.

The situation however, is not quite as alarming as some believe. A more rational use of oil revenues, combined with close co-ordination in the oil-marketing policies of the regions oil-producing countries could alleviate the problem of revenue need and introduce an element of stability with regard to oil price levels. Quite clearly, the ability to attain these objectives depends on the extent of determination to interrelate the volume of oil production to the real requirements of economic and social development.

C. The depletable nature of oil

Heavy dependence on a single and depletable commodity is a major concern of many of the countries in the ESCWA region, and more particularly for the major oil producers.

In the major oil-producing countries, in spite of the sharp decline in oil prices which began in the early 1980s, the value of oil represents about 50 per cent of total GDP.

In some of the oil-producing countries in the ESCWA region, oil revenues represented about 95 per cent of total government revenues. The share of oil exports in total exports ranged between 90 and 100 per cent. Oil therefore plays a primordial role in the economy of the region.

But, oil, after all, is an exhaustible resource, and with a few exceptions the region has no other natural resources of any significance. An unproportional increase in oil production for accumulating currencies which is subject to depreciation simply ends up by exhausting the major natural resource of the region without having significant positive effects on the development prospects of the region. By the same token, the excessive use of energy only wastes the most important material wealth of the region.

Viewed from this perspective, marketing policies in the ESCWA region are affected by internal considerations of the utmost importance. Energy conservation, the development of alternative energy sources and substitutes and the control of production and exports in proportion to the requirements of economic growth and diversification are therefore major elements in the energy policies of the ESCWA region.

V. NATIONAL ENERGY POLICIES

Those ESCWA countries which have no significant oil resources responded promptly to the new oil situation by adopting policies aimed at maintaining the desired economic development, alleviating the burden of oil import bills and assuring the security of energy supply.

Various policies to reduce the excessive demand for energy and improve energy-use efficiency in the different sectors were also adopted in several countries of the region, including the oil rich ones.

A common feature of energy policies in most ESCWA countries is the importance attached to the diversification of energy resources through the development of renewable, non-conventional and alternative sources of energy.

A. Energy conservation and efficiency

Energy conservation policies have been adopted by almost all countries in the ESCWA region.

Despite the varying degrees of achievement of ESCWA countries in the management of energy demand, efforts put in this field concentrate on several major areas.

1. Pricing systems

In almost all countries of the ESCWA region, energy policies in this field were first oriented towards low oil product prices. This was true in the oil-producing as well as in other countries of the region. The policy of keeping oil product prices as low as possible prevailed for a long time over arguments to adopt pricing systems that match the real economic cost of a product and, consequently, reflect the real cost of using energy.

In the industrial sector, energy pricing policies were primarily aimed at keeping production costs as low as possible in order to encourage the development of local industries and strengthen their competitive position in internal as well as external markets. Low oil product prices were therefore used as an incentive to achieve the objectives of national economic development plans.

Low pricing policies were also intended to serve such relevant economic and social objectives as the need to improve living standards and prevent the rapid erosion of the real incomes of those segments of the population that already had low incomes.

Many countries, however, have now reoriented their energy policies in this field. Although social considerations and issues of income distribution are taken into account when formulating and implementing energy policies, greater attention is now given to efficiency-based pricing policies.

The outcome of recent pricing policies in the region cannot be assessed owing to the lack of information and data, but it would seem that most ESCWA countries are now aware of the strategy about how high energy prices should be and which product should be subject to taxation.

2. Energy audit

Little attention has been paid in the ESCWA region to the importance and significance of auditing the use of energy in the different sectors. Efforts have been mainly directed towards conducting studies and surveys and making general recommendations.

In some of the countries of the region, however, the energy audit is now considered the most effective tool in identifying energy waste and the excessive use of energy, particularly in the industrial sector and in others where energy consumption for certain activities is high.

With a few exceptions, energy audits undertaken in certain sectors in the ESCWA region reveal that energy is wasted or used excessively, mainly because of the lack of awareness of the role of management, the lack of proper maintenance and the limited utilization of energy-saving technologies.

If, however, ways can be found to improve management at a reasonable cost, the cost of introducing sophisticated technologies is often a discouraging factor in several countries of the ESCWA region. Significant investment is needed if substantial technological changes and transformation for the installation of energy-efficient equipment are to be implemented. The energy audit is a diagnostic process. It helps to identify deficiencies both in management and equipment. The energy audit can therefore pave the way for the introduction of appropriate measures to increase efficient use of energy. The effectiveness of the energy audit depends on the response of policy makers.

Regretfully, in many cases, the energy audit was merely regarded as a series of recommendations similar to those resulting from general studies and surveys. Sometimes, however, the energy audit has been taken very seriously, and has contributed to the achievement of significant energy savings. Improvements in this field have resulted not only in the more efficient use of energy but also in reducing the adverse environmental effects of certain energy-intensive industries. A case in point is the mounting of filters in cement factories and the replacement of old brick-making systems by new environmentally sound ones in several countries in the ESCWA region.

3. Building designs

The boom in the construction sector in many ESCWA countries has made a significant contribution to the establishment or expansion of the infrastructure required to promote the economic and social development of the ESCWA region.

The construction sector has expanded in many ESCWA countries through the introduction and utilization of modern techniques and technologies in design and building.

The success achieved in the construction sector has cast a shadow over several other issues which are a major concern for policy makers, engineers and the general public.

Buildings and other facilities were often designed and constructed without due consideration being given to the climatic and other local conditions of most countries of the ESCWA region. This has resulted in the extensive use of energy for heating and especially for cooling in countries with severe climatic conditions.

There are no reliable data on the amount of energy wasted as a consequence of the construction of buildings and other facilities that are inappropriate to the climatic conditions of the region. But the sharp increase in the demand for energy, mainly in the household sector, is a clear indication of how much energy is needed to meet the requirements of modern buildings.

The reaction to this in the ESCWA region varies from one country to another. Some countries have conducted extensive technical studies and tests and experiments on the raw materials used for construction in order to assess their suitability for specific local conditions. In many cases, there is a tendency to return to traditional designs which require far less energy to provide sufficient comfort for the harsh climatic conditions.

Modern technologies have been studied, assessed and often used in the construction of new buildings.

However, the impact of these efforts has been very limited and considerable amounts of energy are still needed to adapt modern buildings to the climatic conditions of the region.

4. Increase in awareness

If policy makers are now convinced that there is a real need to conserve the depletable energy resources of the region and improve the efficient use of energy in the various sectors, intensive efforts are still needed to increase the awareness of the general public of the seriousness of such issues.

The measures taken and methods used in several countries have had little effect. The excessive use of energy continues, especially in countries where energy is considered to be too cheap to be counted as an important element in normal expenditure. Even in countries where energy is imported and therefore, costly, the advice given to use energy rationally is not heeded by the general public.

Much more effort is needed, therefore, before the general public can be convinced of the serious consequences of the excessive use of energy.

B. Prospects for renewable and non-conventional sources of energy

1. Renewable energy

The first major oil price increase in the 1970s triggered off considerable enthusiasm in the development and use of renewable energy. As most projections during that period predicted the continuation of the high cost of oil, interest in the use of renewable energy technologies gained considerable momentum in the developed as well as the developing countries.

The minimal environmental effects of the use of renewable energy technologies attracted researchers and policy makers to the possibility of disseminating them. Such considerations and an abundant supply of renewable energy resources encouraged even the oil-rich countries in the ESCWA region to undertake research and initiate demonstration and development programmes for the diffusion of renewable energy technologies.

Other ESCWA countries that have no oil resources but which have a potential in renewable energy have paid great attention to the prospects of utilizing renewable energy technologies in the hope of finding reliable alternatives to costly imported energy supplies.

The determination of the third category of ESCWA countries to develop their renewable energy resources lies in their keen interest in the diversification of energy sources.

The interest shown throughout the world in the use of renewable energy was soon translated into research, development and demonstration activities and the initiation and implementation of programmes to develop and improve various renewable energy technologies to make them technically and economically viable.

The United Nations' agencies have been particularly involved in the development of new and renewable sources of energy.

The Nairobi Programme of Action^{1/} adopted by the United Nations Conference on New and Renewable Sources of Energy in 1981 provided guidelines and orientation for national, regional and international action to promote the development of various renewable energy sources.

The ESCWA secretariat has allocated a significant portion of its energy programme resources to the promotion of the development of renewable energy sources in the region and to the diffusion of appropriate renewable energy technologies. In establishing its priority areas in this field, the ESCWA secretariat has adopted a strategy that is oriented towards the development of the three major renewable energy sources in the region, namely solar, wind and biomass energy. In addition, it has established the nucleus of a regional information network in co-operation with a number of countries in the region.

^{1/} Report of the United Nations Conference on New and Renewable Sources of Energy, Nairobi, 10-12 August 1981 (United Nations publication, Sales No. E.81.I.24, chapter I, sect. A.

However, since the time of the Nairobi conference, the price of conventional energy resources has fallen, and attitudes have changed.

A study published in 1987 by the International Energy Agency gave pertinent expression to this change of attitude by stating that as a result of this experience, however, expectations concerning the pace of development and the contribution of renewable energies to energy supplies are now more realistic. This is partly because costs of conventional energies now seem unlikely to rise as far or as fast as was anticipated in the 1970s, and in fact, have recently fallen affecting all alternatives. It is also because of a better assessment of the time needed for development and market penetration. These factors, combined with budgetary constraints, have weakened some governments' support and industry interest in developing alternatives to oil.

It is still believed, however, that the pace of the development of renewable sources of energy in the ESCWA region should continue and even be accelerated.

As indicated in the statement above, this set-back can only partly be explained by the decline in the price of conventional sources of energy. In the ESCWA region numerous infrastructural, technical and financial barriers hinder the development of renewable sources of energy. Once these difficulties can be overcome, the potential of renewable energy will be much greater, particularly in rural and remote areas where renewable energy sources, mainly in the form of biomass, can make a considerable contribution to the provision of basic energy requirements. Such energy sources meet about 40 per cent of the energy needs of Latin America, 50 per cent of those of the Asian-Pacific region and 50 per cent of those of Africa. A similar situation exists in many areas of the ESCWA region.

On the other hand, environmental problems are a major cause for concern all over the world, and this by itself is sufficient justification for investing in the development of renewable sources of energy.

2. The potential of hydropower

If the utilization of solar, wind and biogas technologies is limited and activities in these fields are generally in the early stages of development, the potential of hydropower has brighter prospects. Large-scale hydropower systems have already been established in a number of ESCWA countries. The region has great potential for the development of this clean source of energy.

3. Non-conventional sources of energy

Non-conventional energy, mainly nuclear energy, was considered to be a breakthrough in the provision of an important source of alternative energy. For a time it was believed that nuclear energy would considerably reduce the dependence on oil and other conventional sources of energy.

At present, many countries are reconsidering their nuclear projects in the wake of falling oil prices and also because of the high risk involved.

It is not within the scope of this study to elaborate on this issue, but it may be of interest to point out that nuclear energy projects do not seem to attract policy makers in the ESCWA region. In a number of countries, well elaborated nuclear energy projects have been abandoned or shelved, at least for the time being.

Even the United Nations Conference on International Co-operation for the Peaceful Uses of Nuclear Energy had enormous difficulties in achieving the objectives that were set for it.^{1/}

It should be pointed out, however, that the anticipation of making technological advances that would reduce the risks involved in the development and use of nuclear energy, together with the uncertainty of the oil market, justify a continuation of the efforts and research to develop the nuclear energy resources available in the ESCWA region, where the possibility of extracting uranium from phosphate rocks promises to provide the required raw materials. However, as the development and implementation of nuclear energy projects require a heavy investment in terms of finance, know-how and technological capabilities, regional, interregional and international co-operation has an important, if not a fundamental role to play in achieving these objectives.

^{1/} See Report of the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy, Geneva, 23 March - 10 April 1987 (A/CONF.108/7).

VI. THE FUTURE OF THE OIL MARKET

Many oil market analysts expect that conditions in the international oil market will be different from those that characterized the 1980s. Such assumptions are based on various factors relevant to the world economy, as well as to the energy sector.

A. Anticipation of a higher demand for oil

It is anticipated that the expected economic recovery will stimulate the demand for oil. Although this may not materialize, as expected, in the developed countries, it is certain to take place in the developing countries where there is a marked trend towards an increase in demand.

1. Limited production potential of non-OPEC countries

It is believed that if the current trend of low oil prices continues, exploration and development activities will be considerably reduced in non-OPEC countries, despite the optimistic views on the availability of oil resources.

2. The prospects of OPEC countries

Most estimates converge that the members of OPEC possess almost two thirds of the world's proven oil reserves. In 1986, the reserve-to-production ratio in these countries was estimated at about 70 years. With further improvements, the prospects for OPEC countries in the oil sector appear to be highly promising.

B. Prospects for stability in the oil market

The above review relates more to the immediate future of the oil market. In the longer term, the picture could be different and the oil market might not be as unstable as it has been since the first oil shock of 1973.

The upward movement in oil prices anticipated by a number of analysts may not materialize owing to a number of developments. Important strategic reserves have been built-up. In many cases, the share of oil in energy mixes has been substantially reduced. And many modern industries have now a multi-fuel capability.

In the long term technical evolution is expected to have a tremendous impact on the oil market.

1. The role of technological advances

It is a fact that the world has always shifted from one energy resource to another. But the issue in question is whether such shifts occur because of the depletion of a resource.

As the International Institute for Applied Systems Analysis so rightly put it in a recent paper entitled "Energy in the world - the present situation and future options", "the world never shifted one resource to another because it's running out of the old resource". Indeed, the major force behind the shift from one energy resource to another lies in the technological advances which make a more suitable and more convenient energy resource that provides better services. The shift from coal to oil occurred because technological developments in upstream as well as downstream oil-related technologies provided a superior fuel.

Other technological developments are expected to result in further shifts. Some of them are already helping to pave the way for further change.

In many parts of the world, there is a shift to natural gas owing to new technological developments in the production and use of this resource. Another advantage of natural gas is its lower environmental cost and impact.

Given the rapid progress of natural gas development technologies, gas may not need to be transported in its present form (piped or liquefied). Most probably, gas could be transformed into a synthetic liquid which can be transported at ambient temperatures and pressure.

It is also expected that technological advances will allow the introduction of a new generation of nuclear power plants that will have fewer hazards and adverse environmental effects and which will be capable of producing electricity at a much lower cost than any other fuel.

Significant progress has been already made in the development of renewable energy technologies that provide a clean and widely accepted source of energy. Some important advances have been made in the development of low-cost photovoltaic cells, and further progress is expected.

These are just a few examples related to the development and diffusion of new sources of energy which have resulted from the progress and breakthroughs made in energy technology. If such developments can be applied they would have an enormous impact on the future demand for oil.

2. Technological developments and oil production

By the same token, developments in the field of oil exploration and production in other regions could result in a substantial increase in oil supply. This would cause another oil glut that would have an enormous impact on the price of oil throughout the world.

The number of newcomers in the petroleum industry is increasing, and their role in the oil market is expected to influence the oil trade and ultimately affect oil prices.

¹/ Hans-Holger Rogner, "Energy in the world - the present situation and future options", International Institute for Applied Systems Analysis.

C. The future of the oil supply of the ESCWA region

The recent study of the International Institute for Applied Systems Analysis entitled "Scenario of energy development"^{1/} summarized the changes that are anticipated in the magnitude, type of fuel and trading partners over the next 50 years. According to the findings of these studies, energy trade volumes are unlikely to decrease substantially over the next 50 years or so. These findings are in contrast to the energy policies of many countries which aim at attaining a higher degree of energy independence. Most relevant to the ESCWA region are the findings of the above-mentioned studies which relate to the volume of oil exported from the ESCWA region. These studies indicate that the countries of the Middle East will continue to form "the prime export region for oil and eventually for natural gas".

This reflects the strong market position of the ESCWA region and the need to preserve and strengthen it through control on the use of energy and the rationalization of its exports.

D. Co-operation and co-ordination with non-OPEC countries

Competition between OPEC and non-OPEC countries constitutes another element of instability in the international oil market and for oil-producing countries. Dialogue between OPEC and non-OPEC countries has already started and ways and means of co-ordinating are being seriously investigated. The difficulties of establishing co-ordination should not be underestimated: there are large differences in the objectives, production conditions and economic and technological development of these countries. The involvement of some major oil-producing countries of the ESCWA region in downstream as well as upstream activities in Western Europe and elsewhere, and the establishment of joint ventures with international and national oil companies certainly constitute positive elements in the attempt to achieve a higher degree of co-operation and co-ordination.

Dialogue between oil producers and consumers is a further step towards mitigating the divergence in interests and policies and it may help to stabilize the oil market.

E. The effects of increased concern for the environment

Increasing concern for the environment adds considerably to the uncertainties that exist in energy investment, which is already affected by the fluctuation in prices. Carbon dioxide (CO₂), which is mainly produced by the combustion of fossil fuels, is a major element in the degradation of the earth's ecosystem.

^{1/} Cited in Hans-Holger Rogner, "Energy in the world - the present situation and future options", International Institute for Applied Systems Analysis.

The World Economic Survey published recently by the United Nations Department of International Economic and Social Affairs^{1/} indicates that a fundamental problem in assessing and analysing the impact of atmospheric CO₂ on climate change is the uncertainty over the anticipated pattern of global energy demand and the role of fossil fuels in future supply.

The above survey states that North America, Western Europe and Japan contribute 49 per cent of global CO₂ emissions, while the developing countries contribute less than 26 per cent.

This will affect the demand for oil world-wide unless technological breakthroughs can reduce atmospheric pollution resulting from the combustion of fossil fuels.

F. Difficulties in predicting oil market conditions

Forecasting is not an exact science. As a matter of fact, it is not really a science. Examples of its inexact nature can be seen in the predicted changes in the oil market and expected trends in oil prices. Many factors affect the oil market and because these factors relate to various complex issues, some may be exaggerated while others can be underestimated. In addition, there may be many unforeseen variables which alter any projections of the future of the oil market, no matter how accurate the figures and data these projections are based on.

As been highlighted in this study the factors affecting the oil trade vary in nature and it is extremely difficult to have a clear perception of their effects. In anticipating developments in the oil market, factors of all kinds - economical, technological, social and political and their interaction - have to be taken into account. This may explain why the study of changing conditions in the oil market and their impact is still so controversial despite the abundance of literature on the subject.

^{1/} United Nations, Department of International Economic and Social Affairs, World Economic Survey 1989 (New York, 1989) (ST/ESA/211).

VII. CONCLUDING REMARKS

This review of changing conditions in the oil market and their impact on energy policies does not cover all the variables that are affected by fluctuations in oil prices or their interaction. It is mainly intended to highlight the complexity of the problem and its implications for the ESCWA region.

Some remarks will, however, be of interest to those intending to embark on an in-depth study of the complex issues related to the oil market.

A. Current relative stability

Oil prices are now under pressure. This is mainly the result of the continuing addition to stocks by the major oil producers. The increasing contribution of small producers and newcomers to the market has also added to stocks.

However, readjustments to oil policies whether by OPEC producers or by other actors in the oil market have succeeded in introducing some stability during the last few years.

B. The level of oil prices

In spite of the tangible and, in some cases, important positive results of energy conservation, most analysts admit that there will be a substantial increase in energy demand over the next few decades. According to reliable estimates, world gross national product may triple and the consumption of primary energy will double by the year 2020. Huge capital investment requirements and controversies over the use of non-conventional energy technologies may limit the supply of non-fossil fuels considerably.

However, the revenue needs of the major oil-producing countries and the role of oil revenues in the overall development of the region may significantly increase the supply of oil to the market.

Important newcomers from the region are also expected to enter the oil market. It is probable that the development of natural gas in some countries in the region, mainly in Qatar, the Syrian Arab Republic and Egypt, and its possible wide use for domestic consumption will raise the potential of the two latter countries to the rank major oil exporters. It need hardly be stated, therefore, that the expected increase in the demand for oil will entail a significant increase in prices owing to the possibility this may have of supplying, counterbalancing or surpassing the increase in the demand.

C. Weakness of regional co-operation and co-ordination

Regional co-operation still falls short of the requirements needed to secure a strong position in the oil market. OAPEC has made great efforts in

this respect and its achievements cannot be denied. But individual tendencies still limit the possibilities of adopting a comprehensive regional energy strategy.

D. Limited success in the field of energy conservation and the development of alternative sources of energy

ESCWA countries are fully aware of the fact that they are extensively using a depletable source of energy, which is also their greatest material wealth. Energy conservation policies in the ESCWA region are, however, far behind those that have already been adopted and, in many cases, strictly implemented in the industrialized countries.

On the other hand, the development of renewable and alternative sources of energy is still confined to conducting research and executing demonstration projects; financial allocations are very limited.

E. The need for co-ordinated investment policies

Oil exploration and its production requires huge amounts of capital, special technical capabilities and sophisticated technologies, which are beyond the reach of many countries of the region. The major oil-producing countries can easily meet their financial requirements and acquire the needed technologies.

A number of national oil companies are involved in huge investment projects. Investment in the region is, however, limited or lacks co-ordination.

It is interesting to note here the question of developing natural gas resources in the region. As was mentioned previously, the region has a significant potential in natural gas. Its development in some of the countries of the region requires, however, huge capital investment. These requirements can be provided in different ways: through the direct involvement of national companies in the major oil-producing countries in exploration and development operations, or through the provision of soft loans to countries with a significant potential in natural gas, but which lack the required capital.

Co-operative efforts can also be made in the production, transportation and marketing of natural gas.

F. Effectiveness of energy policies

Energy policies could be more effective if the oil-producing countries were more aware of the long-term implications of agreements on individual quotas when they designed their energy plans and programmes. In turn, these quotas should be based on explicit criteria.

G. Co-ordination with non-OPEC oil-producing countries
in the ESCWA region

Energy policies are often stimulated by the major oil-producing countries. However, there is no co-ordination with the other oil-producing countries of the region. As was stated before, such co-ordination could help the latter to develop their oil potential and, consequently, allow them to play a role in the international oil market. If natural gas resources were exploited and used in the right way and if new oil discoveries proved profitable, a development such as this could be imminent. After all, some of these countries are, important oil producers, but because of their internal energy needs, or because of demographic and/or other factors, their role in the international market is limited.

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