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of Changing Conditions in the Oil Market
on Energy Policies in the ESCWA Region
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**Impact of Changing Conditions in the Oil Market
on Energy Policies in the
ESCWA Region**

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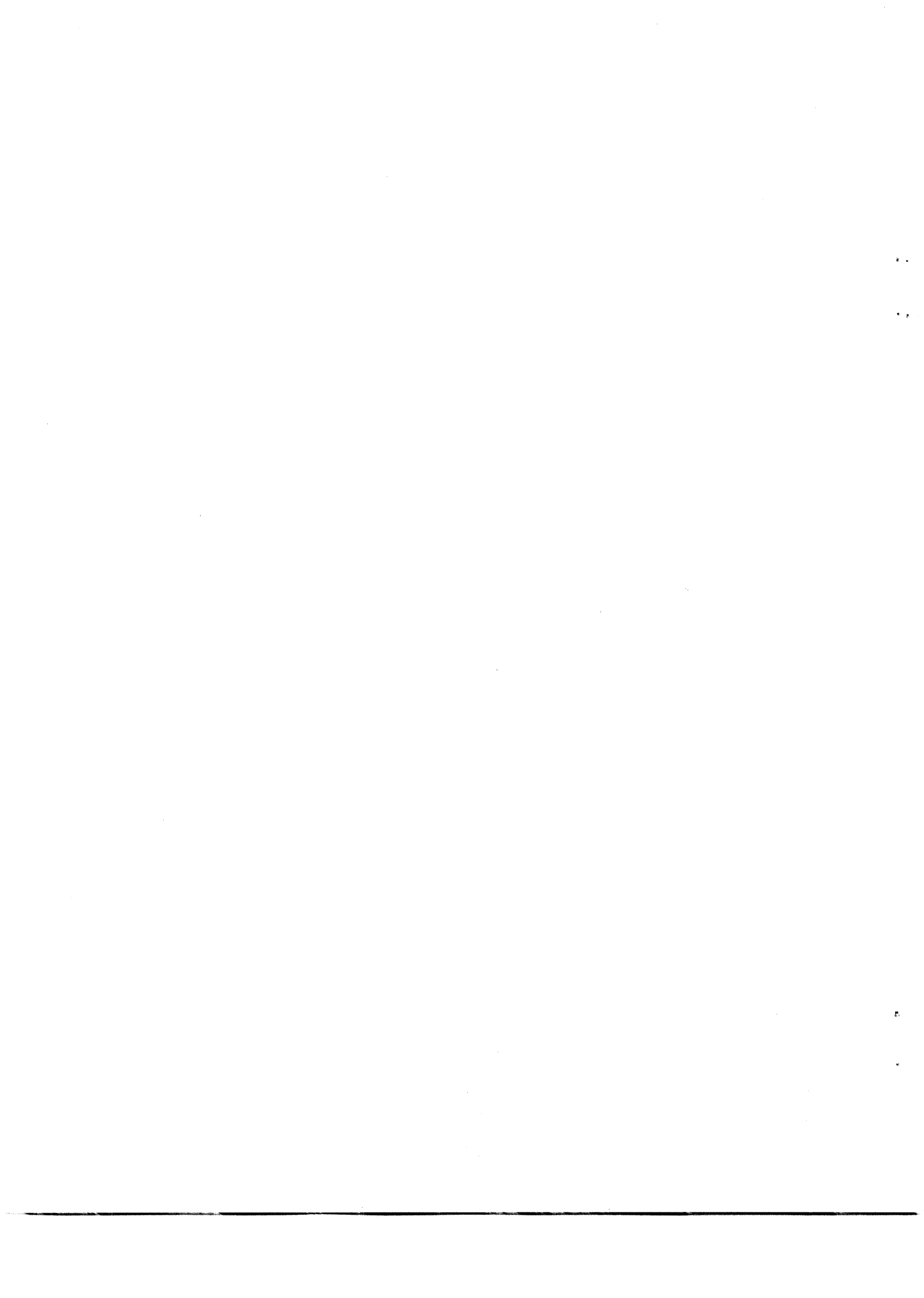
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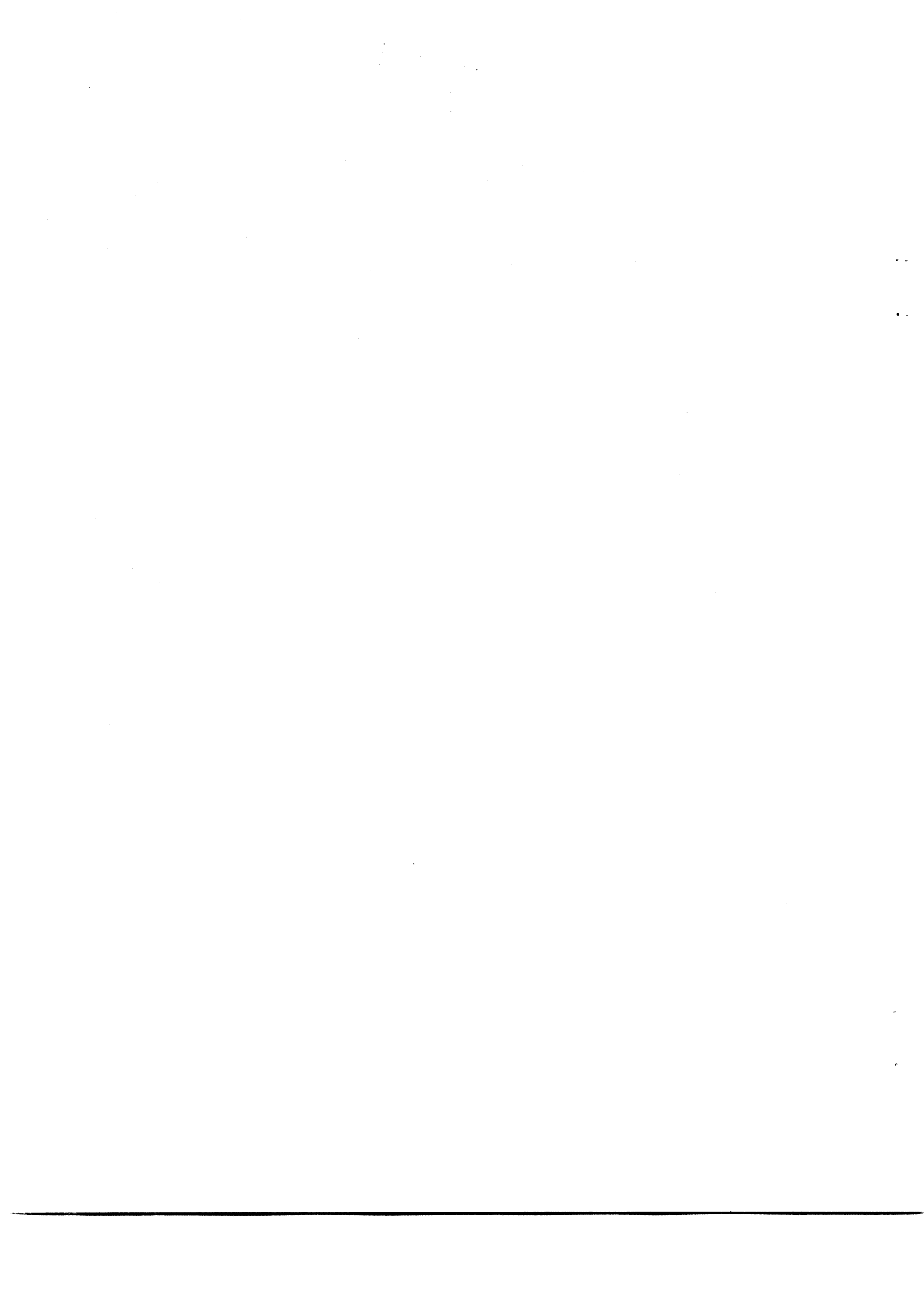
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Foreword

The present publication has been prepared in implementation of ESCWA work programme and priorities for 1988/1989. It is aimed at examining energy issues of major concern to the region particularly the changes in the oil market, fluctuations of oil prices and their impact on energy plans and policies.

The publication is also intended to serve as a background document to 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 of oil prices. Some futuristic views on the oil market are also presented in this publication which is ended by concluding remarks for the consideration of national and regional entities involved in energy issues and development of oil resources in the ESCWA region.



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1. Introduction and background:

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

No wonder, therefore, that changing conditions in the oil market and the subsequent fluctuations of oil prices have been 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 price in the direction of much lower levels. In 1983, oil prices fell from \$34 to \$29 per barrel. The trend of tumbling oil prices continued until it reached its lowest level of \$9.64 per barrel around mid 1986, before rising again to the current level.

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

The 1980s or at least the period 1981 to 1986 witnessed a serious disequilibrium in the world economy, and generally weak world economic development.

In many oil-producing countries, fluctuations of oil prices have led to very difficult economic situations, in the long run. At the time of soaring oil prices, important revenues and in some cases considerable surplus money were pouring into the budgets of these countries. Several governments used large amounts of their revenues in large-scale and ambitious 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 were faced with enormous difficulties for 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 to be able to meet the subsidy requirements.

The repercussions of the fluctuations of 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 the world crude oil production. The region also holds over 57 per cent of the world oil reserves. But many ESCWA countries depend in 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 to a large extent from one country or one group of countries to another. Taking this fact into consideration, it may be stated that the countries of the ESCWA region fall into three main groups: first, those with large petroleum resources and which have become major oil exporters; second, those that are self-sufficient in energy with, in some cases, significant exporting capacity; and third, those deprived of significant energy resources and which remain net importers.

However, irrespective of the big differences in their petroleum resources, the dramatic changes in the oil market and the violent fluctuations of oil prices have considerably affected all the ESCWA countries.

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

Financial assistance to other countries in the ESCWA region whether in the form of loans, aid or grants had to be reconsidered, let alone the considerable decrease in the remittances from the major oil producers to other countries of the ESCWA region. This curtailment of income has had serious recessionary and adjustment implications.

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 the ever increasing financial requirements.

For its part, OPEC has been intensifying its efforts in facing the instable situation of the oil market. It first started by adopting a strategy of supporting oil prices through the curtailment of the production of its membership. A ceiling production was therefore set and production quotas were instituted. A production ceiling of 17.5 mb/d was first set, then reduced to 16 mb/d. A further reduction to 15.8 mb/d was agreed upon by OPEC members in 1987. However, this ceiling rose to 16.6 mb/d in 1988 and to 18.5 mb/d in the first half of 1989 reflecting the concern of oil producing countries about their decreasing oil revenues.

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

OAPEC has been particularly concerned with regional strategies and policies within the framework of close co-operation and co-ordination among the Arab oil producing countries.

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

The present study attempts to address certain important issues of the most relevant aspects of energy policies in the ESCWA region within the context of an instable oil market taking into consideration the fact that the international oil industry is facing an uncertain future.

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 for energy conservation, development of alternate sources of energy, and appropriate pricing systems at the national level, though due consideration is given in this publication to these aspects because of their utmost importance and the growing concern they cause in many countries. The scope of energy policies in this region is much wider. It encompasses areas of regional and global dimensions. More importantly, oil policies in particular, have worldwide ramifications and serious implications for economic growth, technological advances and social development.

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

But, the ESCWA countries are members in OPEC, OAPEC or in both. The decisions taken and recommendations agreed upon therein are, therefore, often determinant 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 aimed at expanding and diversifying the activities of the ESCWA countries in the development of their oil resources, securing a market position commensurate with their weight as major oil producers, and commenting on the national plans and policies and promotion of non-conventional, alternate and renewable sources of energy. The study also provides, to the extent possible, an overlook on the trends of the oil market and future options.

2. Promotion of processing activities and involvement in downstream operations:

It is no news that the world's petroleum industry is undergoing a 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 its implications, albeit external shocks are still major factors in the marketing policies.

However, control over oil resources remains incomplete and often vulnerable without acquiring downstream activities and market outlets.

It is to be recognized that notable efforts have been deployed in several countries of the ESCWA region to reduce the degree of vertical integration gripped by the multinational corporations in the oil industry since the early years of its development. But the dramatic changes in the oil market, the volatility of oil prices and their 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.

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

2.1 Contribution of the ESCWA region to the world refining capacity:

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

At first sight, the current trend of refining capacity expansion may, therefore, look to be an overestimation of the absorptive capacity of the market.

Such assumptions are definitely irrelevant in the sense that they leave out the basic considerations behind the strategy of the oil producing countries which aims at introducing an element of stability into the world market and compensate as much as possible the loss of revenues resulting from cheap oil, since refining adds value to every barrel.

2.1.1 Downstream investments:

Until recently, the size of investments of the 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 his pertinent publication (The Arabs and the Oil Crisis, 1973-1986), Mr. Ali Attiga, the former Secretary-General of OAPEC, indicates that "the 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 have occurred since then contributing substantially to the increase of refining capacity in the region.

2.1.2 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 petroleum products demand and 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 for middle distillates. More flexible refineries were therefore needed to meet the domestic products market and to strengthen the capabilities of the ESCWA region for exporting refined products. As a result, development of refineries has been oriented towards flexible processing using sophisticated and highly advanced technologies.

What has been achieved in the ESCWA region in this field during the last fifteen years or so is impressive indeed.

According to recent figures, the total refining capacity of the OPEC countries reached 7.7 mb/d in 1987. Compared with the refining capacity in 1983, this figure represents an increase of 1.5 mb/d in the Gulf States alone.

The refining capacity of ESCWA countries stood at 2.2 mb/d in 1975, while production of crude oil was 20.2 mb/d. 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 increased substantially since then in absolute terms, to 4.1 mb/d in 1988, but ESCWA capacity still only accounts for a small portion of the total world capacity. By 1985, due to increases in production by countries outside the ESCWA region, ESCWA countries accounted for 16 per cent of crude oil production, but the refining capacity of these countries had increased slightly so that it 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 comparing total oil exports since the ESCWA region provides almost 40 per cent of the world's crude oil exports.

In spite of the relevance and validity of the above observation, some examples of progress achieved in the ESCWA region are worth stressing. In Saudi Arabia, the refining capacity has been expanded through joint ventures. This has resulted in an increase of this country's refining capacity from about 1.2 mb/d in 1983 to almost 2 mb/d as of 1986. Kuwait is not relying on joint ventures. This country has, however, remarkably up-graded its refining capabilities during the 1980s. Recent studies admit that the "Kuwait refining sector will probably emerge as the most advanced refinery complex in the world". Kuwait has also bought downstream assets in western Europe in refining and marketing to secure a market for some of its crude oil. This country began acquiring downstream assets in Europe in 1983, at a time of falling world demand. By 1986, Kuwait could process over four-fifths of its crude oil in its refineries at home and abroad as this country now owns two refineries in Europe, in addition to its network of petrol stations. According to some estimates, Kuwait can now sell up to 250,000 b/d of refined oil products in Europe, and this figure is expected to double through new acquisitions. The domestic refineries produces now about 700,000 b/d of oil products.

In Egypt the trend is also towards the expansion of refining capacity and the increase of the production of downstream petroleum products for domestic use and export. This trend is viewed in Egypt as an important element of its long trend investment strategy for accelerating the rate of growth of the national industrial sector.

Refining capacity in Egypt increased from 200,000 b/d to over 440,000 b/d, between 1970 and 1985. Recent estimates indicate that this capacity is expected to exceed 770,000 b/d, by 1990.

It is worth noting in this regard that the strategy of expansion of downstream activities differs in many respects from one ESCWA country to another. Kuwait, for instance, has been adopting a strategy aiming at entering directly and developing or purchasing assets on its own, while Saudi Arabia has opted for a joint venture policy. Saudi Arabia's strategy in this regard is to a large extent similar to the path followed by the major oil companies in entering joint ventures with large concerns with very important refining and marketing agglomerations.

In any case, both countries have succeeded to meet their domestic needs for petroleum products and reduce their dependence on crude oil exports.

In spite of the significant progress achieved and the success realized in developing and up-grading the processing and refining capabilities, it is widely admitted that co-ordination of refining and marketing strategies is still among the most pressing issues the oil producing countries are faced with. 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.

2.2 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 the pipeline systems in the ESCWA region exceeded 7.24 mb/d. Recent expansions in a number of countries have considerably contributed 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 mb/d. It is therefore expected that by 1990, the region's capacity of export will be about 10 mb/d of oil through pipelines.

Noticeable progress has been made in the improvement of 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 DWT. This figure represents some decrease in comparison with that of 1987, but this is due to the reflagging of ships which took place during the Iraq-Iran conflict. The apparent decrease does not actually represent any real loss of fleet capacity to the region. Total deadweight tonnage may increase now that the hostilities have ended and such an increase would more accurately reflect the situation in the region.

Some ESCWA countries also rely on trucks to carry oil. Iraq used trucks extensively for international transport of oil during the hostilities. But Iraq announced recently that it has stopped using trucks for oil transport. Now that the hostilities have ceased and its pipeline capacity has increased, Iraq transport its oil by pipeline and by tankers.

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

In its efforts to promote regional co-operation in downstream investments which require large capital, modern management and markets, OAPEC has succeeded in identifying opportunities for investments to be undertaken by 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 aiming at enhancing regional co-operation and facilitating the penetration of markets.

The attainment of such objectives requires intensive efforts and determination on the part of the ESCWA region and other Arab countries. 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 disadvantage of the ESCWA region and other Arab countries, the nationalistic tendencies are still more or less prevalent. A marked disparity still exists between joint and individual efforts, with regard to investment

priorities and oil transportation policies. It often happens that, in spite of the fact that the countries of the ESCWA region and other Arab countries now own their crude oil and tankers, there are difficulties and obstacles in taking advantage of the strong position of these countries and facing the adverse conditions of the market.

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

3. Recent developments in upstream activities:

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

The decrease in oil prices and its instable and uncertain market have already influenced the strategy of many countries. Exploration and development activities have been considerably reduced and new projects curtailed or simply shelved. This has severely affected petroleum enterprises of which many have reconsidered their current and planned operations.

At present, oil companies are reported to have embarked on the largest retrenchment since the collapse of oil prices in July 1986. The cuts in upstream operations are accompanied in many cases by restructuring of exploration and production business. It is worth noting here that the reduction of exploration and production activities by the oil companies has resulted in considerable loss of jobs.

The new orientations of the oil companies reflect a marked shift in oil-exploration strategies. In 1986, and after the collapse of oil prices, the oil companies succeeded in cutting off oil exploration by one third. There was, however, another important element which made it possible for the oil companies to achieve significant savings; that was the price competition among the oil-service companies. Now upstream costs have risen by a fifth, compared with the low level of 1986.

The cornerstone of oil companies' strategy is lower costs. But the environment concern is affecting the whole structure of the petroleum industry. Only those oil companies flexible enough to comply with environmental regulations and to cope with the higher taxes on the use of hydrocarbons, may 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, and with the exception of a number of cases such as Yemen, Democratic Yemen or Oman, little interest is shown in spending in most other parts of the region. The use of highly advanced technologies, has contributed to the discoveries of much 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 slack of exploration will be reversed. This slack is explained by the trend towards up-grading oil and gas reserves. Recent figures of specialized periodicals indicated that Saudi Arabia "up-graded reserves at the end of 1988 to over 252 billion bbl of oil and over 177 tcf of gas, compared with previous government estimates of 170 billion bbl of crude oil and 146 tcf of gas".

Up-grading of reserves has also been undertaken in Iraq, Kuwait and the United Arab Emirates.

But, in spite of the curtailment of seismic and drilling operations and the increasing interest in up-grading the present reserves, exploration activities are being undertaken in several parts of the region, though at limited scale.

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

The two countries have now established a joint exploration company to undertake its operations in the neutral zone where several international ventures were also invited to seek concessions. It is expected that concessions can be allocated during this year. Exploration operations are also maintained in some parts of Yemen where a number of international oil companies are taking an active part.

In Democratic Yemen, exploration and discovery operations are continuing and foreign oil companies are also involved in these operations. The Government of Democratic Yemen posts the reserves at 3.65 billion bbl without indicating whether these reserves are actually proven.

The most active exploration and production activities are being undertaken in Oman.

The intensive exploration operations undertaken by the "National Petroleum Development of Oman", with involvement of a major oil company, have resulted in an increase of oil reserves from 2.5 billion bbl in 1982 to 4.1 billion bbl, according to recent figures, compared with other oil-rich countries of the ESCWA region, it seems unlikely that large oil fields can be discovered in Oman, and present discoveries appear small by the region's standard. Consequently, the Government policies relating to operating and tax systems tend to promote the development of small reservoirs.

However, the unexplored parts appear to have promising prospects of discovering larger deposits in the northern and off-shore areas.

The example of Oman is very interesting. As a recent issue of a specialized periodical put it, 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, there are at least eight international companies having concessions in Oman.

According to official sources, Oman is planning to spend in 1989 around US\$70 million on oil exploration, US\$18 million on gas exploration and about US\$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 produce about 20,000 b/d of oil in Western Europe and America and has stakes in some South-East Asian countries where it is also involved in joint ventures.

Some experts question the rewards of such policies on the ground that overseas oil may cost ten times to produce than the oil produced in the region.

Those countries involved in overseas operations appear to aim at producing oil for nearby markets and strengthening their position in the world petroleum industry. This is believed to keep oil prices constant in real terms.

It is also of interest to review here the situation with regard to natural gas exploration and development give the worldwide growing interest in natural gas.

The exploration and assessment of resources undertaken in the region reveal that several ESCWA countries have significant gas potential. In addition to those countries producing associated gas, recent discoveries have proved important natural gas reserves, mainly in Qatar, Syria and Egypt.

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

Syria and Egypt are energy self-sufficient with capacity for oil exportation. Both countries are reported to have significant natural gas reserves. The development of natural gas and its exploitation for domestic consumption will substantially contribute to the increase of their oil exports.

On the other hand, development of natural gas and its wide exploitation can be a major component of the region's strategy for the diversification of energy resources of which oil is still, in several countries, the single energy source for export as well as for domestic uses.

As sulphur free and with less carbon-dioxide, natural gas is a much more environmentally desired source of energy. The expected increase in the demand for gas is, therefore, another encouraging factor for promoting the investment in the gas sector.

According to recent estimates, the Arab countries have natural gas reserves reaching the equivalent of almost 80 per cent of world oil reserves. And it is to be recognized that significant progress has been achieved in overcoming the problems of flaring associated gas. At present, natural gas is exploited not only for energy generation, but also for the production of fertilizers and petrochemicals. Natural gas is also liquefied and used for export in a number of Arab countries. Many experts are of the opinion that if the present rate of implementation of gas projects is maintained, the region will achieve the optimum utilization of the associated gas.

Many issues and problems with regard to the development and exploitation of natural gas need to be faced and solved. The high cost of gas transportation and distribution constitutes a major obstacle to the development of natural gas in the region. There are plans for pipelines and other transportation facilities, but intensive efforts in terms of investment and technological advances are still needed to overcome such major constraints.

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

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

4. Adjustments to contractual terms:

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

The impact of uncertain oil market and instable prices on investment decisions in oil exploration and production is among the most crucial issues faced by policy-makers in developing countries. The petroleum industry seeing its cash flows reduced and facing increased risk has become more cautious about their expenditure for exploration and development. It goes without saying that the extent to which the petroleum industry is ready to invest in such activities depends on the geological prospectives and the contractual terms with the host countries.

4.1 Negotiation of contract 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 and at the same time provide terms that can help the petroleum industry offset the negative affects of lower prices. In other words, the need to reconcile the exigency of the petroleum industry for flexible contract terms and the necessity of preserving the national interests of host governments is still among the hot issues in the promotion of the development of energy resources.

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

Oil importing countries in the ESCWA region without significant current production or important proven reserves are now faced with enormous, if not insurmountable difficulties, in undertaking exploration operations through international sources. Unless there is a close regional co-operation for providing the required resources, these difficulties will continue so long as the changing conditions in the oil market and fluctuations of 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 very much concerned with high and immediate payback.

4.2 Forms of contracts:

There are various forms of contract and mechanisms of agreements. The most widely known forms of contract are mainly concession/investment agreements, service contracts and joint venture arrangements. These forms of contract are now concluded in various hybrid combinations.

It is beyond the scope of this publication to discuss in detail the terms and advantages and disadvantages of all these exploration requirements, financial arrangements, revenue-sharing and remuneration, development obligations and transfer of technology. Suffice it to stress here that the region has now well developed national oil companies with, in many cases, important financial resources and involvement in the world petroleum industry. Adjustments, therefore, appear to be easier.

4.3 Contractual difficulties:

Many problems and difficult questions arise between the host governments and the oil companies following the discoveries of oil in commercial quantities.

Disagreements may occur in the definition of commerciality which in most cases the oil companies tend to interpret 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 for attracting the international oil companies often weakens the bargaining position of developing countries.

5. Marketing policies:

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

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

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

5.1 OPEC production and pricing policies:

The 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's position constitute the most relevant indicator of the development of marketing policies of the ESCWA countries.

A decade ago OPEC had the major role in the energy market. Since then, this role has diminished. The world recession, the shift to other sources of energy and the success achieved in the field of energy conservation have together contributed to the reduction of oil consumption of the 24 countries of the OECD by one fifth in 1985 in comparison with the figure of 1979. OPEC has, therefore, tried to increase its share in this shrinking market.

By 1982, the above-mentioned considerations and the increasing capacities of non-OPEC countries had considerably affected the market position of OPEC and the demand for OPEC oil began to plunge sharply. OPEC lowered the benchmark price and introduced new production quotas. But few OPEC countries complied with the decisions of OPEC neither in terms of output nor in terms of prices. The level of spot prices plunged below official prices. However, the declining spot market prices did not result in an increase in the demand for oil. An alternative pricing system: the netback prices, was introduced by a number of OPEC countries. This desired level of demand has not been achieved either and oil prices continued to decline until it reached its lowest level by mid-1986. But, even during that period, output of OPEC only increased from 17.2 mb/d to 19.4 mb/d between 1985 and 1986, though the increase was a little higher in terms of net exports. In 1988, and while the average price was less than a third of the 1981 price, the OPEC countries exported 40 per cent of the world's oil (centrally planned economies excluded); down from the 66 per cent in 1976. By contrast, oil production of non-OPEC countries continued to increase or declined very slightly. OPEC introduced in 1986 a new system of government-administered prices and production quotas. This, perhaps, was among the main factors in regaining a relative oil price stability at the level of US\$18 per barrel.

According to the most recent arrangements reached in mid-1989, the ESCWA members of OPEC, as a group, would be allowed 51 per cent of total OPEC output. This represents no change in percentage terms over the percentage allowed to ESCWA members of OPEC over the first half of 1989. In absolute terms, however, quota levels have increased for OPEC as a whole as well as for the ESCWA members of OPEC as a group.

Among the main difficulties of OPEC in the oil market is that it has a spare capacity of 8-10 mb/d. In the opinion of many experts in oil marketing, 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, estimating that the demand of the OECD countries for oil increased by 1.7 per cent in 1987 and by 2.8 per cent in 1988.

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

Another indication in favour of this opinion is that the non-OPEC oil producers raised their output by a fifth from 1979 to 1986 as a result of high prices. This level of production could fall dramatically in case of another collapse of oil prices. In 1985 oil production of the United States fell by 9 per cent. Some believe that there will be a substantial decrease in the output of the non-OPEC countries in the course of the 1990s.

The above argument can hardly be sustained. In 1986 the major oil companies expressed how devastating the consequences would be to the petroleum industry, if oil prices declined to a level below US\$15 for the barrel. However, in 1988, the oil price plummeted to US\$12 a barrel and nevertheless, the major oil companies were prospering. And since 1986 the production of the non-OPEC countries has increased by a further 3 per cent.

OPEC, realizing that its policies of setting both price and production levels are very unlikely to achieve its objectives is trying to change its approach, particularly after the major oil producing country has abandoned its role of a swing producer. The main concern of OPEC is now to have its members complied with the production quotas. It accepts to leave the prices to the market in the hope that a rise in the world demand for oil will make possible and more profitable an increase in its production and to 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 stick to their production quotas. The fear of not being able to achieve these objectives explain that a number of OPEC members, mainly the major oil producing countries, have turned to downstream integration.

5.2 The income need of oil-producing countries:

Meeting revenue needs is a crucial issue, if not a dilemma, in the marketing policies of oil producing countries in the ESCWA region. The main reason is that the income needs for only meeting the operational and maintenance costs of the existing infrastructure built while large foreign currency reserves were available, have reached such high proportions that severe revenue shortfalls have hit most oil producing countries of the region as a result of falling oil prices. An increase in the production would lead to further decline in oil prices while higher prices would affect the demand for oil and further weaken the market position of oil producing countries of the region.

The situation does not appear, however, as alarming as some tend to believe. A more rational use of oil revenues combined with close co-ordination in oil marketing policies of the oil producing countries in the region could alleviate the problems of revenue needs and introduce an element of stability with regard to the levels of oil price. Obviously, the attainment of these objectives depends on the extent of determination to inter-relate the size of oil production to the real requirements of economic and social development.

5.3 The depletable nature of oil:

The heavy dependence on a single and depletable commodity continues to be a major concern to many countries of the ESCWA region, specifically the major oil-producing ones.

In the major oil-producing countries, the value of oil represents about 50 per cent of their total GDP, in spite of the sharp decline of oil prices since the early beginning of this decade.

In some oil-producing countries of the ESCWA region, oil revenues have represented about 95 per cent of the total governments revenues. The share of oil exports in the total exports has ranged between 90 and 100 per cent. The magnitude of the role of oil in the economy of the region is, therefore, incomparable.

But, oil, after all, is an exhaustible resource and with a few exceptions, the region does not have other significant natural resources. An out of proportion increase in the production of oil for accumulating currencies is subject to depreciation simply ends up in exhausting the major natural resource of the region without significant positive effects on the development prospects in the region. By the same token, the excessive use of energy results in wasting the most important material wealth of the region.

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

6. The national energy policies:

Those ESCWA countries deprived of significant oil resources responded promptly to the new oil situation by adopting policies in order to maintain the desired economic development, alleviate the burden of oil import bills and to assure the security of energy supply.

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

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

6.1 Energy conservation and efficiency:

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

Despite the varying degrees of achievements of ESCWA countries in the management of energy demand, it can be stated that efforts put in this field concentrate on several major areas.

6.1.1. Pricing systems:

In almost all countries of the ESCWA region, energy policies in this field were first oriented towards low oil product prices. This trend was prevailing in oil-producing as well as in other countries of the region. Keeping oil product prices as low as possible prevailed for long periods over the arguments to adopt pricing systems matching the real economic cost and consequently reflecting 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 to strengthen their competitive position in the internal and external markets. Low oil product prices was therefore used as an incentive to achieve the objectives of the national economic development plans.

Low pricing policies were also intended to serve such relevant economic and social objectives as the needs for improving the living standard and preventing rapid erosion of the real incomes of the already low income segment of the population.

Many countries have, however, shifted their energy policies in this field to different orientations. Although social considerations and issues of income distribution are taken into account in the formulation and implementation of energy policies, much more attention is now given to the efficiency-based pricing policies.

Little information and data are available to assess the outcome of the recent pricing policies in the region, but most ESCWA countries are, apparently aware of the notions about how high energy prices should be and which product should be subject to taxation.

6.1.2 Energy audit:

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

In some countries of the region, however, the energy audit is now considered the most effective tool in identifying energy waste and its excessive use, particularly in the industrial sector, and other highly energy consuming activities.

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

But, if the management can be improved through means that can be provided with reasonable cost, the introduction of sophisticated technologies is often a discouraging factor in several countries of the ESCWA region. Significant investments are needed to proceed with the substantial technological changes and transformation for installing energy-efficient equipment. Energy audit is a diagnosis process. It helps in the identification of deficiencies whether in management or equipment and their use. Energy audit, therefore, paves the way for introducing improvements and taking the appropriate measures for more efficient use of energy. Its effectiveness depends on the responses of policy-makers.

Regretfully, energy audit, in many cases, ended up in recommendations similar to those resulting from the general studies and surveys and are treated as such. This does not exclude, however, that energy audit has been in some cases taken very seriously, and has, therefore, contributed to the achievement of significant energy saving. Improvement in this field has not only resulted in more efficient use of energy but also reduced the adverse environmental effects of certain energy-intensive industries. A case in point in this respect is the mounting of filters in the cement factories and the replacement of old brick-making systems by new environmentally sound ones in several countries of the ESCWA region.

6.1.3 Building designs:

The boom in the construction sector in many ESCWA countries has considerably contributed to the expansion or the establishment of the infrastructure required for promoting the economic and social development of the ESCWA region.

The expansion of the construction sector has been achieved in many countries of the ESCWA region through the introduction and utilization of modern techniques and technologies in designing and building.

The success achieved in the construction sector has cast its shadow over several other aspects which now cause a major concern to the policy-makers, engineers and the general public.

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

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

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

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

However, the effects of these efforts have been very limited and considerable amount of energy is still used to accommodate the modern buildings to the climatic conditions of the region.

6.1.4 Increase of awareness:

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

The measures taken and the methods used in several countries have been of little effect. The excessive use of energy is continuing, especially in countries where energy is considered too cheap to be counted as an important element in usual expenditures. Even in countries where energy is imported and costly, advices for a rational use of energy are not heeded by the general public and are often ignored.

Much more efforts are, therefore, needed to reach a stage of awareness where the general public can be convinced of the serious consequences of the excessive use of energy.

6.2 The prospects for renewable and non-conventional sources of energy:

6.2.1 Renewable energy:

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

The minimal environmental impacts of the use of renewable energy technologies attracted researchers and policy-makers to explore the possibilities of their dissemination. Such considerations and the endowment with abundant supplies of renewable energy resources have 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 which are deprived of oil resources but with promising renewable energy potential have paid great attention to the prospects of the utilization of renewable energy technologies in the hope of finding reliable alternatives to the costly imported energy.

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

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

The Nairobi Programme of Action adopted in the Nairobi Conference on New and Renewable Sources of Energy in 1981 provided guidelines and orientations for national, regional and international actions for promoting the development of various renewable energy sources.

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

But, since the time of the Nairobi Conference, the prices of conventional sources of energy have fallen. The attitude has changed.

A recent study published in 1987 by the International Energy Agency pertinently expressed this change of attitude in 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 development of renewable sources of energy in the ESCWA region should continue and even be accelerated.

As indicated in the above statement, the set back is only partly explained by the decline in the price of conventional sources of energy. In the ESCWA region there are many infrastructural, technical and financial barriers hindering the development of renewable sources of energy. Once these difficulties are overcome, the prospects of renewable energy will be much more promising, particularly in the rural and remote areas where renewable energy sources, mainly in the form of biomass, contribute considerably to the provision of basic energy requirements. Such energy sources still contribute about 40 per cent of energy needs in Latin America, 50 per cent in the Asia-Pacific region and 50 per cent in Africa. A similar situation still exists in many areas of several countries of the ESCWA region.

On the other hand, environmental problems are causing major concern all-over the world and this is by itself a too strong justification to be disregarded in investing in the development of renewable sources of energy.

6.2.2 The potential of hydropower:

If the utilization of solar, wind and biogas technologies is limited and activities in these fields are mostly at their early stage of development, the potential of hydropower offers bright prospects. Large-scale hydropower systems are established in a number of ESCWA countries. The region has a highly promising potential for the development of this clean source of energy.

6.2.3 Non-conventional sources of energy:

Non-conventional energy, mainly nuclear, has been considered a breakthrough in providing a very important alternative energy. And there was a time when it was believed that nuclear energy would reduce considerably the dependence on oil and other conventional sources of energy.

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

It is beyond the scope of this study to elaborate on this issue, but it may be of interest to point out here that nuclear energy projects do not seem attractive to the policy-makers in the ESCWA region. In some 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 noble objectives it had been set for.

It may be of interest to stress, however, that the expectations of technological advances to reduce the risk involved in the development and use of nuclear energy and the uncertainty of the oil market, can justify the continuation of efforts and pursuing research for the development of available nuclear energy resources in the ESCWA region where the possibilities of extracting uranium from phosphate rocks represent promising prospects for providing the required raw materials. But, as the development and implementation of nuclear energy projects require large investment, know-how, and technological capabilities, regional, interregional and international co-operation has an important, if not a primary role for the achievement of these objectives.

7. The future of the oil market:

Many oil market analysts expect that the international oil market conditions 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.

7.1 Anticipations of higher demand for oil:

It is anticipated that the expected economic recovery will stimulate the demand for oil. This may not be materialized as expected in the developed countries, but it is certain in the developing countries where trend of demand increase is very strong.

7.1.1 Limited production potential of non-OPEC countries:

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

7.1.3 The prospects of OPEC countries:

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

7.2 Prospects for stability in the oil market:

The review of the above opinions relates more to the immediate future of the oil market. In the longer term the picture may look different and the oil market may not be as instable as it is now since the first oil shock of 1973.

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

In an even longer run the technical evolution is expected to have a tremendous impact on the oil market.

7.2.1 The role of technology advances:

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

As the International Institute for Applied Systems Analysis so rightly put it in a recent paper on "Energy in the World-The Present Situation and Future Options", the "world never shifted one resource to another because it is 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 have made more suitable and a more convenient energy resource available for better services. The shift from coal to oil occurred because technological development provided a superior fuel. The displacement of coal by oil was the result of various breakthroughs in the oil related technologies upstream as well as downstream.

Further technological developments entailing other shifts are expected. Some of them are already playing an important role in paving the way for changes.

In many areas, the world is shifting to natural gas due to the new technological developments in its production as well as its use. Another advantage of natural gas is its lower environmental costs and impact.

It is also expected that technological advances may allow in the future to introduce a new generation of nuclear power plants with much less adverse environmental effects and hazards and capable of producing electricity at much lower costs than any other fuel.

Significant progress has been already achieved in the development of renewable energy technologies providing a clean and widely accepted source of energy. Some important achievements have been made and progress continues in the development of low cost photovoltaic cells.

Those are but few examples in connections with the prospects of development and wide use of new sources of energy as a result of continuing progress and breakthroughs in the energy technology. Such developments if materialized and applied would have enormous impacts on the demand for oil in the future.

7.2.2 Technological developments and oil production:

By the same token, developments in the fields of oil exploration and production in other regions may result in a substantial increase in oil supply and cause another oil glut affecting considerably the prices of oil throughout the world.

The number of new comers in the petroleum industry whose role in the oil market is expected to influence oil trade and ultimately affect the oil prices is increasing.

7.3 The future of oil supply of the ESCWA region:

The International Institute for Applied Systems Analysis' recent studies on "Scenarios of Energy Development", summarize the changes 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". Such findings contrast with 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 regarding the size of the oil exports of the ESCWA region. The studies indicate that the countries of the Middle East will continue as "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 the control of energy uses and the rationalization of its exports.

Given the rapid progress of natural gas development technologies, gas may not necessarily 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".

7.4 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 perturbation for oil producing countries. Dialogue between OPEC and non-OPEC countries has already started and ways and means for co-ordination are being seriously investigated. This should not underestimate the difficulties of co-ordination because of the big differences in the objectives, production conditions and economic and technological development. The involvement of some major oil producing countries of the ESCWA region in downstream as well as in upstream activities in Western Europe and elsewhere and the establishment of joint ventures with international and national oil companies are certainly positive elements in achieving higher levels of co-operation and co-ordination.

The dialogues between oil producers and consumers are further steps forward for mitigating the divergences of interests and policies and may be of help in the stabilization of the oil market.

7.5 The effects of increasing environmental concerns:

The increasing environmental concerns are considerably added to uncertainties in energy investments already affected by the fluctuations of prices. Carbon dioxide which mainly results from the combustion of fossil fuels is a major element in the degradation of the earth's ecosystem.

The recent World Economic Survey published by the United Nations Department of International Economic and Social Affairs 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 only contribute less than 26 per cent.

This will affect the demand for oil worldwide, unless significant technological breakthroughs are achieved for reducing the elements of pollution emitted into the atmosphere as a result of the combustion of fossil fuels.

7.6 Little grounds for predicting the oil market conditions:

Forecasting is not a proper science. As a matter of fact, it is not even a science. This holds true in the predictions of changes in the oil market and expectations of trends of oil prices. There are so many factors affecting the oil market. And because these factors relate to various complex issues, some may be exaggerated while others could be underestimated. In addition, there might be so many unforeseen variables which could alter any outlook for the future of the oil market, no matter how accurate the figures and data it is based on.

As often highlighted in this publication, the factors affecting the oil trade are of a different nature and it is extremely difficult to have a clear perception of their effects. In anticipating the developments of the oil market, factors of all kinds; economical, technological, social and political and their interaction, have to be taken into account. This may also explain why the study of changing conditions in the oil market and their impact is still so much alive despite the abundance of writings and literature in this field.

8. Concluding remarks:

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

Some remarks are, however, of interest at least for a more in-depth discussions of the complex issues of the oil market.

8.1 Current relative stability:

Oil prices are now under pressure. This mainly emanates from the continuing addition to stocks by the major oil producers and partly through the increasing contribution of small producers and new comers to the market.

However, readjustments of oil policies whether inside OPEC or by the other actors in the oil market have resulted in introducing some stability during the last few years.

8.2 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 substantial increases of energy demand over the next few decades. According to reliable estimates, the world's gross national product may triple and the consumption of primary energy will double by the year 2020. The huge capital investment requirements and the controversies about the use of non-conventional energy technologies may considerably limit the supply of non-fossil fuels.

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

It is also expected that there will be important new comers from the region to the oil market. It is very likely that the development of natural gas in some countries of the region, mainly in Qatar, Syria 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 can hardly be stated, therefore, that the expected increase in the demand for oil will necessarily entail a significant increase in its prices due to the possibility of supplying counterbalancing or surpassing the increase in the demand.

8.3 Weakness of regional co-operation and co-ordination:

Regional co-operation still falls short of the requirements for securing a strong position in the oil market. OAPEC has deployed extensive efforts in that direction with undeniable achievements. But individual tendencies still limit the possibilities of adopting a comprehensive regional energy strategy.

8.4 Limited success in the field of energy conservation and development of alternate sources of energy:

The 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 adopted and, in many cases, strictly implemented in the industrialized countries.

On the other hand, development of renewable and other alternate sources of energy is still confined to conducting research and executing demonstration projects with very little financial allocation.

8.5 The need for co-ordinated investment policies:

Exploration for oil and its production requires huge amounts of capital, special technical capabilities and sophisticated technologies. This is beyond the reach of many countries of the region. The major oil producing countries can easily meet the financial requirements and acquire the needed technologies.

A number of national oil companies are involved in vast investment projects. Their investments in the region are, however, limited or lack co-ordination.

It is of particular interest to raise here, too, the question of development of natural gas resources in the region. As mentioned earlier, the region has a significant potential of natural gas. Its development in some countries of the region requires, however, huge capital investments. Such requirements can be provided through different means. This can be achieved through direct involvement of national companies of the major oil producing countries in the exploration and development operations or through soft loans to be provided to those countries with significant natural gas potential, but lack the required capital.

Co-operative efforts can also take place in the production of natural gas, its transportation and marketing.

8.6 Effectiveness of energy policies:

Energy policies could be more effective if the oil producing countries designed their energy plans and programmes with greater awareness of the long-term implications of the agreements on individual quotas which should be in their turn based on explicit criteria.

8.7 Co-ordination with non-OPEC oil producing countries in the ESCWA region:

Energy policies are often stimulated by the major oil producing countries without co-ordination with the other oil producing countries of the region which might, as stated before, succeed in further developing their oil potential and consequently have a role in the international oil market. This could be imminent if the natural gas resources were exploited and used in the right direction and new oil discoveries proved profitable. Some of these countries are, after all, important oil producers, but their internal energy needs, because of demographic and/or other factors, limit their role in the international market.

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