## THE ROLE OF POLITICAL ECONOMY OF OIL IN IRAN AFTER THE REVOLUTION (1979-88)

### Masoud Ghaffari

Tarbiat Modarres University, Tehran

## Abstract on a second of the sound of Abstract on a second of sound at the second of th

This article focuses on the political economy of oil in Iran between the years 1979 and 1988. For decades before revolution, many believed that oil was the symbol of foreign exploitation in Iran. Therefore, during the revolution, the oil production became a symbol of the political struggle between the Shah and his opponents. However, the revolution made possible the control of oil industry. Indeed, in the post-revolutionary period, Iran did nearly everything possible to reduce the oil production and to limit the exports. This reduction was rooted in new structural changes and was a direct consequence of the revolution. This article analyzes the courses of developments in Iran with particular reference to the political and economic changes relating to Iran's oil policy.

#### Introduction

Throughout 1960s and for most of 1970s, Iran's modernization programme proceeded at a steady pace. As the structure of the Iranian state changed, the state itself became increasingly dependent on the rapid increase in oil revenues. In 1954, Iran's oil revenues had totaled less than \$ 34 million, but by 1973 they reached nearly \$4.6 billion. An increase of 65% on the 1972 figure of \$2.8 billion, and the comparable figure for 1974, after the quadrupling of world oil prices, was \$17.8 billion, an increase of 287% over the previous year. During 1953-78 the cumulative oil revenues came to as much as \$54 billion<sup>1</sup> (Abrahamian, 1979; Central Bank of Iran

Annual Report, 1974-75). Indeed, as a result of the rapid growth of world demand for oil, which more than tripled between 1949 and 1972, oil revenues increased sufficiently to enable the Shah to take Iran into an era of unprecedented growth<sup>2</sup>.

The Shah's oil policy from 1957 with the formation of the NIOC and continuing through the creation of OPEC in 1960 until late 1970s, was to encourage greater oil production and to demand higher prices for Iran's oil. This oil policy was rooted in the immediate revenue needs of the Shah's ambitions for economic and military development. Therefore, the state depended heavily on a single major resource, i.e. oil.

As a result, the state of Iran and the entire economy became dependent on international economic forces<sup>3</sup>. These developments including hasty dependent developments planned rapidly generated massive social and economic problems and inequa-lities among the major social classes resulting in the conflicts of the 1977-79 period.

Consequently, during the revolution, the control of oil production became a symbol of the political struggle between the Shah and his opponents. Later, in the post-revolutionary period, Iran maintained the policy of lowering the oil production but as a consequence of the approaching structural changes. This article aims at analysing the courses of developments with regard to the changes in Iran's oil policy.

### Political Order after the Revolution in Iran

Following the resignation of Amouzegar government in 1978, the last three governments -- under Sherif-Emami (from 27th August to 5th November 1978), Gholam-Reza Azhari (from 6th November 1978 to 5th January 1979), and Shahpur Bakhtyar (from 6th January 1979 to the day of the new Government) -- adopted different policies to rescue the Shah's regime. Sherif-Emami offered a policy of threats and incentives that failed in both respects<sup>5</sup>. The Black Sunday marked the crisis that led to Sherif-Emami's dismissal. The Shah then turned to the army as the last element in the country considered loyal to him. On 6th November, he appointed his Chief of Staff General Azhari as prime minister. Azhari's appointment was intended to demonstrate a forceful military option, but the new government could not earn credibility. Ayatollah Khomeini described it as a new plot by which the Shah hoped to break the spirit of the opposition by means of a new massacre. Within a few days, a wave of strikes brought economic life to a virtual standstill, the disruption of the oil industry doing the most damage to the regime. The Iranian oil workers began their strike on 13th October 1978, immediately halting exports.

They seized and shut down the national oil

installations. This continued until the fall of the Shah. The importance of this episode becomes apparent if placed in the larger context of the revolution of February 1979. The strike of October 1978 was coordinated with widespread political public opposition against the regime of the Shah, whose very restoration to power in 1953 spelled out the de facto denationalization of the oil industry, and whose presence enhanced the domination of the consortium in Iran. The conflicts in the oil fields set the scene for a general strike by all the workers in the oil industry. The strike had a crucial impact on the financial management of the regime and the chances of its survival, despite the support of the US Government.

The demands of the striking workers, in general, and of the oil-workers in particular, were not primarily motivated by economic considerations. Nor was the struggle of the oil-workers constrained by the limits of the industry. As of 29th October 1978, the demands and declarations were:

- 1. an end to martial law;
- 2. full solidarity and cooperation with the striking teachers;
- the unconditional release of all political prisoners;
- 4. the expel of all foreigners from the oil industry;
- the punishment of corrupt ministers and high-level officials in the Shah's government, and
- 6. the dissolution of SAVAK.

Later, in December 1978, the oil workers completed their set of demands by calling on the Shah to abdicate. The oil strike had reduced production from 6 m b/d to 240000 b/d by 6th January 1979 ('Documents in US Embassy in Iran', No. 66, P. 106).

The new government asked the oil-workers to go back to work, offering them a 22 percent pay rise and higher housing allowances but refused to respond to their political demands (KI, 25 October; IHT, 20 October 1978).

On 31st December, Azhari resigned and on 6th January 1979, Bakhtyar set up his new cabinet with

the hope of securing the monarchy by co-opting some of the opposition elements into a coalition government. At this point, Ayatollah Khomeini insisted that Bakhtyar's cabinet was illegitimate because the Prime Minister had been nominated by the Shah. Moreover, Ayatollah Khomeini had long refused to countenance any kind of coalition government or any other compromises (AFP, 3 November

Eventually, on 16th January 1979, the Shah was forced to abandon the throne and the country for the second time, and with his departure the monarchy ended. On 5th February, Ayatollah Khomeini appointed Bazargan to head a provisional government, making it clear that anyone opposing it violated sacred religious law and would be harshly punished (TJ, 6 February 1979).

There were large demonstrations in Tehran and most other cities calling for Bakhtyar's resignation in favor of Bazargan. On February 9th and 10th, clashes between the demonstrators and army units caused some casualties and deaths. On February 11th, the army withdrew its support of the Bakhtyar's government, declaring its neutrality in the political struggle<sup>6</sup>. Consequently, Bakhtyar's government collapsed and Bazargan moved into the Prime Minister's office. The post-revolutionary political change began with what may be called the revolutionary stage.

The major political events that contributed to the building of a state from the beginning of the revolution until the establishment of a stable government took place in three stages: during the first stage, four events in 1979 were important: 1) the referendum on the political system in March, that resulted in the endorsement of the Islamic Republic; 2) the election of the members of the Assembly of Experts to review the first draft of the new Constitution in August; 3) the referendum on the new Constitution in December; and 4) the takeover of the US Embassy in Tehran by Moslem students following the Imam's Line on 4th November 1979. This incident began US hostage crisis and ended the period of dual government. During this period the freedom of speech was exercised in its most extensive shape and all political rivals were able to express their views freely, and were allowed to hold open meetings in universities and elsewhere.

The second stage, that overlapped partially with the first, started in September 1980 when Iraq invaded Iran. The war brought the necessity for consolidation but open conflict continued among the rivals. The initial consensus among various groups was gradually replaced by discord and conflict.

The third stage began with the first presidential election in January 1980 and developed into a reign of terror<sup>7</sup>. Along these internal developments, the impact of external forces on post-revolutionary Iran was also significant. Major difficulties arose in the period after the occupation of the US Embassy on 4th November 1979, followed by US Government imposition of comprehensive sanctions on Iran. A trade embargo, banning the flow of goods between the US and Iran was imposed in April 1980. There was also a ban on Iranian oil exports. Before the embargo, Iran's oil exports to the US had been 174000 b/d that was only 5 percent of Iran's total exports (Keyhan, 3 November 1979).

In contrast, Iran was importing \$2.7 billion worth of goods and services from the US (Keyhan, 9 April 1979). The sanctions affected the Iranian economy slowly but surely. The first economic development plan after the fall of Bani-Sadr's government was put forward by the new Prime Minister, Dr. Bahonar, and formalized by the Plan and Budget Organization (PBO).

By August 1981, the PBO had prepared the draft of the National System of Planning, that was approved by the Economic Council (EC) composed of the Prime Minister and a number of other ministers in December8. The document set a number of targets for growth of various sectors and the necessary rates of capital formation for the achievement of the desired growth. The basis for the estimation was the model used by PBO during the Shah's regime. Here it was assumed that the oil

exports would continue to be the main source of financing the needs for capital formation. The plan envisaged that there would be a need to export crude petroleum at least at a level of 2.5 m b/d up to the year.

Despite its approval, the EC made certain criticisms about the plan<sup>9</sup>. The followings are the main objections raised:

- The plan had presented no clear view about the nature of the desired society.
- 2. The EC insisted that self-sufficiency in agriculture should be one of the main goals of any development plan.
- 3. The projected oil exports during the final phase of the plan were too high. According to the EC, the heavy reliance on oil exports (85 percent of total exports) by the end of the long-term plan was an indication of dependence on oil revenues. And,
- 4. The goals of the plan should have been to achieve economic independence, to abolish poverty, and to provide education, health care, social security, housing and employment. Economic independence was defined as a situation in that the exposure to any confrontation that would lead to the closure of the channels of entry of strategic goods and commodities to the country, would not lead the national economy to a collapse.

This formulation undoubtedly reflected the Government's concern about the US trade embargo. Again the PBO drafted a new five-year plan (1983-87) based on the directives of the EC. This was approved by the Council on 31th August 1982<sup>10</sup>. It was approved further by the Cabinet and then submitted to the Parliament in August 1983<sup>11</sup>.

The general orientation of the plan was designed to bring about improvements in education and the propagation of Islamic culture, achievement of economic independence, and social welfare (Economic-Social and Cultural Development Plan of IRI, 11 June 1983, Vol. 1, PP. 1-10).

An average annual growth rate of 9 percent for the economy as a whole was forecasted. The growth of agriculture was expected to be 7%, that of industry 14.1% and that of construction 9.8%. The plan assumed that the international price of petroleum would be \$29 per barrel at a constant 1982 price. Given this price, the exports would rise from 2.2 m b/d in 1983 to 2.5 m b/d by 1987 (Ibid., PP. 2-3 and PP. 2-15).

In order to materialize the goals of the plan, the country needed either a total mobilization of all productive sectors or another oil bonanza. However, with the continuation of the war and the fall in the international price of oil, the actual performance of the economy moved away from the stated goals of the plan. The special committee authorized to approve the plan could not justify the inconsistencies existing in the plan. Hence the draft of the plan was left without any ratification. It was not until January 1986 that the First Plan was finally passed. The plan was presented to the Parliament by Masoud Zanjani who was the new Minister of the Planning and Budgeting. In his speech of presentation of the draft of the plan, Zanjani said: 'From the new point of view, the determining element is not the growth, ... but the existing capacities ...; therefore, we will not start any major investment. The emphasis is on finishing the existing projects' (Keyhan, 7 January 1986).

### The New Oil Policy

In the eyes of the Iranian people, for decades, oil was the symbol of western exploitation of their country and the source of western decadence in their society. On the eve of the revolution, Ayatollah Khomeini participated in an interview in Paris with the Beirut newspaper Monday Morning of 8th January 1979, in which he stated: "The Shah has been giving our oil to the US to strengthen his government without any legitimacy. With the revenues he has been buying arms that are in no way useful to the people of Iran ... I have given orders that no more oil be exported, and these strikes will continue until the Shah leaves. We will then sell our oil to the various countries to which we wish" (MEES, Vol. 22, No. 13, 15 January 1979, PP. 2-3).

As Iran underwent structural change, the oil

industry became more significant ideologically. Therefore, the revolution carried out important reforms in the structure and policy direction of Iran's petroleum industry. In fact, the many conflicting internal and external policies directly affecting the petroleum sector influenced in turn the behavior and performance of the domestic economy.

Consequently the first priority for the Provisional Government, according to the Prime Minister's policy speech given on 9th February 1980, was "rebuilding the oil industry and the economy" (MEES, Vol. 22, No. 17, 12 February 1979, P. 3).

Even Iran's first President, Bani-Sadr, declared: "until now OPEC has always been the instrument of the US; this Organization has never been independent" (Ibid., P. 5).

Guided by new attitudes, Iran's production and export policies underwent major changes. The following features were the major guidelines for petroleum policies:

- Oil resources were to be conserved;
- Exports should never exceed 3-3.5 m b/d;
- The official OPEC price was to be treated as a floor price;
- The former consortium members should receive a share of 30 to 50 percent of Iranian oil sales. The sales to the independents were to be preferred;
- Iran's spot sales should be maximized given the right market conditions; direct state-to-state deals were to be encouraged, particularly when developing countries were involved, and
- Barter deals should be particularly discouraged, except for small volume exports to Eastern Europe (EIU, July 1980, PP. 40-44).

These guidelines were to be supplemented by a ban on exports to both Israel and South Africa. Until late 1978, about 80000 b/d or 29 m b/d annually (PIW, 22 January 1979, P. 8) that was almost half of Israel's oil imports came from Iran.

# The New Oil Policy and the Multinational Oil Companies

The power of the International Consortium, the group of 14 companies formally known as the

Iranian Oil Participants, that had marketed Iranian oil output, and of the Services Company of Iran, that had provided various operational services for the oil fields, had now definitively come to an end. This was announced officially on 28th February 1979 by Hassan Nazih, the new Chairman and the Managing Director of the National Iranian Oil Company (NIOC). "We tell those companies that were imposed on us in the past that it is better for them to withdraw, because if they refuse, the workers will kick them out". He concluded: "With the termination of the Consortium arrangements, NIOC will deal with its individual oil companies on a direct basis" (MEES, Vol. 22, No. 20, 5 March 1979, P. 8).

In order to benefit from this radical action, the Provisional Government was eager to substantially increase oil production and exports. On Monday 5th March 1979, the 12th anniversary of the death of former Premier Mossadeqh, the Prime Minister Bazargan said that Iran's production would be set at about 60% of previous production level, or somewhere between 3 and 3.5 m b/d, leaving at least 2.5 m b/d for export (MEES, Vol. 22, No. 20, P. 1).

This volume would be divided into 2.8 m b/d of nine-month contracts and 200000-300000 b/d of spot oil (12-28-12). NIOC had previously been selling around 600000 b/d of crude oil in the spot market in the period after the revolution. There had been 5.7 m b/d of production and 4.9 m b/d of exports as late as October 1978.

Table 1. Iran's Oil Production and Revenues 1978-82.

Year	1978	1979	1980	1981	1982
Production m b/d	5.700	3.180	1.480	1.320	1.980
Revenues \$ Billion	21.735	19.079	13.005	8.060	17.020

Sources: IMF 1981, OPEC: Secretariat, BP Statistical Review of World Energy, 1981.

Before the revolution, Iran's oil exports had flowed through three different channels:

 The trading compaines of the consortium that delivered a percentage of their share for domestic consumption and directly exported the rest,

- 2. The four joint ventures IPAC, SIRIP, IMINOCO and LAPCO, that lifted 50% of their own production, and
- 3. NIOC's 50% share of the joint ventures. NIOC did not export its crude oil.

During the remainder of the 1979-80 period, NIOC secured more than 50 contracts with companies throughout the world. The contracts are classified as follows:

- 1. 21 contracts with independent oil companies in Western Europe, the US, and Japan, with a total delivery of 950000 b/d,
- 2. 6 contracts with state oil companies including those of Romania, Brazil and the Philippines with a total delivery of 270000 b/d,
- 3. 8 contracts with major international oil companies including BP, CFP, Shell, Exxon, Gulf Oil, Texaco and Caltex, with a total delivery of 1.0-1.1 m b/d. BP and Shell were to receive 125000 b/d and 95000 b/d of crude respectively, and
- 4. 20 contracts with various companies throughout the world such as those of India, Spain, West Germany, Sweden and Eastern European states, with a delivery of 700000 b/d (MEES, Vol. 22, No. 29, 7 May 1979).

Consequently, 12 Japanese companies became a major factor in Iran's crude sales, purchasing around 35 to 40% or 620000 b/d of Iran's oil. It is worth mentioning that even before the revolution, Iran had supplied almost 20% of Japan's total oil needs (AOG, Vol. 9. No. 2000, 16 January 1980).

In the case of the US, the embargo had sharply reduced sales to the major oil companies from 931,000 b/d in 1979 to 347,000 b/d in 1980 (Supplement to MEES, Vol. 22, No. 46, 3 September 1979, PP. 3-4).

BP, due to its historical position, was far more dependent on Iran than any of the other companies. A total of 40% of supplies of BP came from Iran and thus, it was hardest hit by the interruption. BP was a wholesaler, selling much of its oil through long-term contracts to third parties- either to the other majors like Exxon or to independent refineries

particularly in Japan. Having lost its Iranian supplies, BP invoked the force major provisions in its contracts and cut back on its buyers. It cancelled altogether its supply contract with Exxon, at the same time seeking to buy oil elsewhere.

### The Role of International Politics on Oil Developments

The events within Iran took place in a wider context of international oil supply developments that will now be discussed. Although until the end of 1978, there was no physical shortage of crude oil on the international market, from October crude oil prices began to climb on the spot market. By mid-November, spot prices were on average some 20% higher than official prices set by the OPEC. Nevertheless from the beginning of Novermeber most of the big oil companies invoked force major and either reduced their oil deliveries to third parties by between 10 to 30% or cut them altogether. All the companies were anxious to conserve as much of their own oil as possible until the situation had become clearer. The shortage thus appeared to be purely psychological.

It was only in January 1979, when the oil workers returned to work and the Iranian crude oil again began to be exported to the world market. Then the real shortage became apparent. OPEC's production fell to 28.3 m b/d which was 3.7 m b/d less than the exports of September 1978. Under such conditions even Saudi Arabia could do nothing to reestablish the equilibrium between supply and demand, as its production was already at maximum capacity.

The US Energy Secretary, James Schlesinger, in a statement to a US commission in early February, indicated that he did not expect exports to start up again "for several months". He added that the world oil crisis caused by the interruption of oil supplies from Iran was "prospectively more serious" than that created by the Arab embargo of 1973-74. However, he pointed out that the shortfall in the US supplies was due to the fact that the petroleum market covered the shortage of supply provided by Iran through a rise in its imports from other

countries, primarily Saudi Arabia, and by drawing 500,000 b/d from inventories, equivalent to 2.5% of US daily oil consumption (MEES, Vol. 22. No. 17, 12 February 1979).

According to the estimation of Ulf Lantzke, the Director-General of the IEA, the shortage of crude in the world market amounted to 2 m b/d, representing 3.3% of world oil consumption. Indeed as he pointed out, 'The problem is not supply, but the price of oil'. He added that there would be no serious difficulties before the second quarter of 1979. Spot prices in the world oil market eased off in the summer, but only slightly. Some OPEC countries continued to reduce their output, Iraq did so in order to punish Egypt for having signed the 1978 Camp David Peace Accord with Israel. Nigeria nationalized BP's extensive holding in that country in retaliation for the British company's alleged indirect sales to South Africa.

The British and Norwegian North Sea Oil Company (BNOC) increased their oil prices by 11 percent in January 1979, at a time when OPEC was still implementing only a 5% increase. On the spot market, Persian Gulf oil prices were \$4 per barrel higher than their official level and, for the first time in history, the price of African light crude reached \$20 per barrel, although the official price was \$17 per barrel. Meanwhile every OPEC country increased its oil prices and entered the spot market. Within two or three months, nearly all the oil exporters, OPEC members or otherwise, as well as both private and nationalized companies, moved to the spot market and sought to sell as much crude or refined oil as possible. The result was that by mid 1979 more than 30% of the international oil trade was being conducted on the spot market. Prior to this, the share of the spot market in crude deals was limited only to about 5%.

By May 1979, with the arrival of the first cargoes of Iranian crude at the international petroleum market, there was practically no physical shortage. Despite this, the mere instantaneous growth of the spot market created its own shortage. This shortage appeared partly due to the activities of international

speculators. In May, Saudi oil was selling for \$ 23 per barrel; although the official price was only \$14.5 per barrel, the contracted market price was 30 to 50% lower than the spot prices. Not only were the companies selling their oil at these prices, they even imposed a \$1 per barrel surcharge on their contractual customers in exchange for the maintenance of flexibility of supply under difficult conditions (MEES, Vol. 22, No. 17, 12 February 1979).

In an attempt to curb the excess profits gained by the companies, OPEC continued to increase its oil prices to around \$20 per barrel on average. Only Saudi Arabia refused to change its policy. The crisis reached its peak towards the end of May. By this time, the price of Saudi oil had reached the record level of \$35 per barrel. Thus in the Summer and early Autumn of 1979 the world oil market was in a state of anarchy. Finally at the 54th OPEC Ministerial Conference held in Geneva on 26-28 June 1979, the Saudi's called for a price lower than \$20 per barrel. Iran, Algeria and Libya favored a price of more than \$21 per barrel.

It was on 28th June that OPEC accepted a compromise proposal with one slight modification at Saudi insistence the base price of OPEC oil was set at \$18 per barrel and the ceiling price at \$23 per barrel (13-34-13). In response to the OPEC meeting the US Chief of the General Staff announced that the Pentagon was setting up a special force of 100,000 men, the so-called Rapid Deployment Force, that would be capable of intervening in the region in order to protect the oil routes should the need arise. France declared that the "Intervention troops must respond to early sort of crisis ... ". Helmut Schmidt, the German Chancellor, commenting on 26 June went even further and evoked the possibility of a global conflict over oil. However Leonid Brezhnev warned that: "Those who think they can use a rapid deployment force to call the Arab countries into renouncing their sovereign rights to dispose their natural resources as they see fit are making a mistake" (Terzian, P., 'OPEC: The Inside Story', 1985, P. 227).

Under pressure from the US, Saudi Arabia

increased oil production to 9.1m b/d in July even though there was no longer a physical shortage. Nevertheless the spot market remained tense due to the fear of instability. This time the price of a barrel of petroleum in the spot market reached \$40. By early October BNOC was adding surcharges of \$8 and \$10 to the price of each barrel in the context of anticipated deliveries in 1980, pointing out that most of the major companies pumping OPCE crude were doing likewise. In the OPEC countries the governments reacted by putting up their prices. Libya was the first in OPEC to break through the ceiling set in Geneva and on 15th October raised the price of its oil to \$26.27 per barrel. Immediately the spot price rose to \$45 per barrel.

Three events now propelled the so-called Second Oil Shock into a new phase. The first was the occupation of the US Embassy (and the subsequent hostage crisis) on 4th November by 400 students of different universities of Tehran. The specific grievance of these students was focused on Mohammed Reza Pahlavi and his relations with the US as well as his presence in the US that revived the memories of 1953 and the fall of Mossadegh. The visit had aroused the fear that the US was about to stage another coup to return the Shah back into the power. On 12th November, Carter announced that thenceforth the US would boycott Iranian oil and froze all Iranian assets in American banks. In response the Iranian Oil Minister, Ali Akbar Moinfar, declared on 16th January 1980 that Iran was ready to reduce her oil production by 50% (1.5 m b/d) or more if Western Europe and Japan joined the US in imposing economic sanctions (AOG, Vol. 9, No. 201, 1 February 1980, P. 7), and indeed BP, Shell and even the Japanese companies, joined the boycott against the Iranian petroleum at later stages. It is worth noting that in 1979, Iran provided 6.5% of the EEC's and 9.9% of Japan's oil imports. The respective figures for the year 1978 were 16.4 and 16.9%.

On 20th November, a few weeks after the seizure of the hostages, a second event occurred: nearly 100 Saudi dissident seized the Great Mosque in Mecca

in protest against corruption in the royal family. A larger uprising occupation shocked the whole Islamic world. A protest by Shia groups took place in the center of the oil region in Eastern parts of Saudi Arabia early in December. According to the Commander of the Rapid Deployment Force, General P.X. Kelly: "The strategic and geopolitical significance of Saudi Arabia is quite likely second to no other nation on the face of the earth in its importance to the future well-being of the free world" (Aburdene Obeh, American-Arab Affairs, Winter 1983-84, PP. 77-8).

It was expected at the time that by 1980, a sum of 56% of total the US petroleum requirements would have had to be imported and 70% of this import would have come from the Middle East.

The third event came at the end of December when the Soviet Union invaded Afghanistan. The invasion resulted in a situation whereby the USSR got very close to warm waters. This meant the Soviet Government was almost fulfilling an ambition that had lasted for almost one and a half century. As a result of these crucial developments in the Middle East, the oil exported from the region, became of even greater importance in the rivalry between the US and the Soviet Union (AOG, Vol. 9, No. 201, 1 February 1980, P. 3).

The Iranian revolution, the hostage crisis and the threats to western oil supplies, together with the Soviet invasion to Afghanistan, completed the evolution of US strategic policy in the Persian Gulf from one of reliance on the British and of the reliance on local surrogates, to reliance, at least in a declaratory sense, to a reliance on its own military interventionist capability. The emphasis on building this capacity came to dominate both the Carter and Reagan Administration's strategic policies on the Persian Gulf (Kupehan, 1987, PP. 146-8).

The US responded to these developments in January 1980 by announcing the so called Carter Doctrine: "Let our position be absolutely clear. An attempt by any outside force to gain control over the Persian Gulf region will be regarded as an assault on the vital interests of the US, and such an

assault will be repelled by any means necessary, including military force" (Warren et al, 1985, PP. 58-6, 112).

US interests in the Persian Gulf were to be protected by the policy objectives listed by the Defense Secretary Harold Brown, in 1980: to insure access to adequate oil supplies, to resist Soviet expansion and to promote stability in the region.

Raising oil prices had now become the aim of all the OPEC countries. At the fifty-fifth OPEC meething, a contest developed between the Saudis and the Iranians. The Saudis, along with Qatar and the Emirates, announced a \$6 per barrel increase and the price of the Saudi crude was set at \$24 per barrel. On the first of April 1980, Iran's selling price was \$35.37 per barrel. This was the highest price within OPEC (AOG, Vol. 9, No. 207, 1 May 1980).

There was no progress during the first two days of the negotiations and in the end neither proposal was accepted. However, all the OPEC countries increased their oil prices without any official compromise. In April 1980, after the failure of the hostage rescue attempt by the US, the oil market lurched into a chaos. It was only then that for the first time, OPEC came to the conclusion that time had come to reunite prices. The organization was approaching its twentieth anniversary and it was the wish of its members to celebrate the occasion in a spirit of the rediscovered unity. Indeed in mid September, a number of OPEC countries agreed to voluntarily cut back their production by 10% in an effort to strengthen the market prices. However before the anniversary meeting of the Heads of States in Baghdad, on 22nd September 1980, Iraq invaded Iran.

### Oil Policy during the War

Before the new oil policy and its aims -- that were to conserve oil resources, to stabilize the official OPEC price, to limit the consortium's activities in Iran, and to sell directly to other countries, particularly to the developing countries -- could be fully carried through after the Iranian Revolution,

several hindering events began to develop in Iran. Among these the most important were the economic recession of the period 1977-80, the internal political struggles, and the Iraqi invasion. The Iraqi invasion, affected the new oil policy due to the fact that almost immediately after the outbreak of the war, both countries were forced to shut down virtually all their oil production fields. Iran's oil production on 22nd September stood at 1,467,000 b/d, but on 25th September a spokesman for NIOC stated that it was running at no more than 500,000 b/d and that this was exclusively for local consumption. Within a week of the outbreak of war, Iran's oil was reduced to little more than a trickle from the islands of Lavan and Sirri in the Persian Gulf. In 1980 total OPEC output dropped to 26.9 m b/d from 30.9 m b/d the previous year, while oil production in Iran fell to 1.5 m b/d from 3,168,000 b/d in 1979 (AOG, Vol. 9, No. 217, 1 October 1980).

Again, OPEC production in 1981 plunged to 22.5 m b/d and production in Iran to 1,316,000 b/d. On the eve of the war in September 1980, Iran's oil exports stood at about 700,000 b/d; due to the damages to oil installations Iran's oil lifting fell to 150,000 b/d in late 1980 and the first two months of 1981. This represented a drop to roughly one-sixth of the total production.

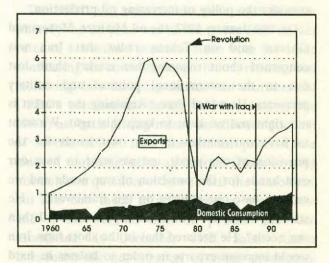


Figure 1. Iran's Oil Export and Domestic Consumption, 1960-1993

Source: Middle East Oil and Gas, OECD/IEA, 1995.

In November 1980, Iran resumed crude oil exports at scaled-down levels, exporting 100,000 to 150,000 b/d of crude oil from Lavan, Sirri and Kharg Islands. In February 1981, Iran exported 1m b/d of oil, 600,000 b/d directly from Kharg Island; some 200,000 b/d from Lavan and Sirri and the remaining 200,000 b/d were moved along the coast from Kharg to Lavan where they were loaded (AOG, Vol. 10, No. 225, 1 February 1981).

This continued to limit oil purchasers' access to Iran's oil terminals, and the war damage naturally reduced production and export capacity to below pre-war levels.

The reduction led to a sharp drop in the state's oil revenues in 1980 and 1981 of \$11.6 billion and \$12.4 billion respectively. Official figures released by the Central Bank announced crude oil production in 1981-82 at 1.48 m b/d on average, showing a massive decline of 57% as compared to the years 1979-80. With such levels of exports while facing the falling oil prices, the ever-rising expenditures of the war amounting to at least one billion US dollars per year, the increasing costs of subsidies for certain basic needs of the general public, and the burden of providing foreign exchange to finance the expenditures, led the Iranian Government in 1982 to consider the policy of increasing oil production.

On 18th January 1982, the oil Minister, Mohammad Gharazi said on Tehran radio that Iran was concerned about retaining her market share lost due to the international political and military pressures. He added that: "Retaining the market is our right and we have to keep this right. We want to have our market in our own hands for the provision of our needs and we want to base our own hands for the provision of our needs and we want to base our policies on this framework". He stressed that: "We will never export more oil than our needs". He declared that in the short term Iran would increase exports in order to bolster its hard currency reserves, "So that political and military pressure will not be able to isolate us economically

on the international level" (MEES, Vol. 25, No. 15, 25 January 1982).

Early in 1982, OPEC quota for Iran was set at 1.2m b/d. Iran believed that this quota bad been imposed arbitrarily by OPEC majority led by Saudi Arabia. The Saudi's took Iran seriously only when Iran took back the cities of Abadan and Khoram-Shahr from the Iraqis in May 1982. On 21st May 1982, at the 64th meeting of the OPEC Ministers in Ecuador, the Iranian Oil Minister stated: "Iran's oil exports have been reduced to a level which has placed its economic and financial survival in dire jeopardy, and at a time when it was also being obliged to fight for its fife in a war launched by an aggressive neighbor" (MEES, Vol. 25, No. 33, 31 May 1982).

It was apparent that the oil-saving strategy instituted after the revolution was short-lived. The drastic fall in overall output, rising budgetary deficits, loss of foreign exchange reserves, and the threatening balance of payments deficit forced the Government to revise its priorities.

Consequently, the Government followed a pragmatic and reactive policy. The Iranian daily newspaper Keyhan argued that Iran was facing both internal and external enemies and would require considerable reconstruction financing. The income needed to reconstruct the war-damaged areas would have to come from oil in the short run. The newspaper suggested a horizon of 20 years for reconstruction as a realistic estimate (MEES, Vol. 25, No. 8, 7 December 1981).

As we have seen, the early goals of separating the economy from oil had proved impossible in the face of economic realities. Furthermore, the war made the country's dependence on oil as a primary source of foreign exchange most visible. As a result of the new oil policy, the Government effectively removed its earlier ceilings on production and adopted several new tactics, such as receiving loans backed by future sale of petroleum and trading oil against goods and services. Consequently, Iran became one of the world's leading producers and exporters of oil. The policy weakened the world demand for oil

Table 2. Trends in Iranian oil production (m b/d), 1977-1982.

Year	Quarter	Iran	Share in OPEC
1977	Sum asimi	5.7	18.2
1978	m my2 med	5.2	17.5
1979	enui nepari	3.1	10.1
1980	les transmin	21 1001 0	LATE AND COME AS
	Q1	2.3	7.8
almen	Q2	1.5	5.6
tres tre	Q3	1.3	4.9
3000	Q4	0.8	3.3
1981	nd boroway	mitubeer	onT avitrates
LWG1 ni	Q1	1.5	6.0
il do i	Q2	1.5	6.6
	Q3	1.2	5.6
ivi sd	Q4	1.1	5.2
1982	damered ni	the war	arred to repeat
DE 10	Q1	1,1	5.6
i erpand m bid	Q2	2.0	11.4
	Q3	2.2	12.0
ond mr 8	Q4	2.7	13.4

Sources: Supplement to MEES, Vol. 26, No. 19, 21 February 1983

in the global recession of 1981-82, and this led to an over-supply of crude from the new non-OPEC producers.

Under such circumstances, price concessions seemed inevitable. Between February and April 1982, Iran had to cut prices five times. Some oil was sold on the spot market at around \$26 per barrel, some were bartered for goods from the Soviet block and other Third World countries. Early 1982, petroleum price was \$7 less than that of a year before. Due to the existence of the war and the risks involved in shipment, Iran was unable to sell its oil at competitive prices and thus took the lead in breaching the official price, whereupon an unofficial downward price spiral developed among other OPEC members. Iran even put an end to the US boycott by selling via the Geneva-based Gatoil International some 1.8m barrels of crude to the US Strategic Petroleum Reserve, reportedly at \$26 per barrel. This was the first sale to the US since 1979.

The peak point of such policy occurred in early summer of 1982 when the discounted price of Iranian oil experts took off dramatically on the spot market. At times the spot prices were \$5 to \$ 10 a barrel below OPEC's official price. During 1983-84, Iran resorted to a number of different schemes to maintain her oil sales. Discounts were regularly offered on official OPEC prices to bring the sale price more in line with spot quotations. In September 1984, Iran offered the prospective buyers the opportunity to take 50% of the oil at official prices and 50% at spot rates. Later the mix was improved to 30 versus 70% respectively (PIW, 24 September 1984).

During 1984, counter-trade was stepped up in order to import goods from all over the world. This kind of marketing intensified after the tanker war had begun and Iran's finances had deteriorated. In 1984, about 25% of Iran's import trade was conducted on a barter basis (Financial Times, 1 April 1985, Iran Supplement, P. 12).

Such transactions helped to maintain Japanese crude lifting from Iran. Japanese traders and the Iranian Government agreed that each \$1 worth of goods sold to Tehran be matched by \$2 in off-takes of Iran's oil (MEES, Vol. 27, 26 November 1984, P. A1). Obviously, such types of trade could not yield the free foreign exchange that the country needed.

The NIOC also entered into some net-back deals whereby the oil price was linked to the final market value of hte refined products made from the crude considering the costs of transportation, refining, and marketing. In a declining market that characterized OPEC's predicament during the first half of the 1980s, net-back pricing meant an effective discount of several dollars from the official price. These kinds of marketing led to an internal debate covering not only the question of how to sell the petroleum. but also how much to sell. However, even by the end of the war, no clear oil policies had been established. In December 1985, Saudi Arabia introduced the new strategy of swing production, that had the effect of increasing oil exports, flooding the market, breaking prices and driving out marginal producers.

During this time Iran's repeated victories over Iraq frightened the Saudis who were Iraq's main ally in the region and prompted them to drive oil prices down and thus deprive Iran of the main source of its foreign exchange revenues. This strategy led to a collapse in the market with crude prices tumbling as low as 6 to 8 dollars per barrel in July 1986. Despite its criticisms of the old regime's approach towards the entire range of its energy policies, regarding for example the petrochemical industry, natural gas and nuclear power, the Government of the Islamic Republic of Iran had come to a point of implementing the same policies. Needing to export more, in the London meeting of OPEC, Iran demanded a rise in her quota from 1.2 m b/d to 2.4 m b/d. In the last quarter of 1982 Iran announced a production goal of 3 m b/d. At that time, Iran's production amounted to 2.4 m b/d, of which 700,000 b/d was for domestic consumption (MEES, Vol. 26, No. 36, 20 June 1983).

During 1983, Iran's oil production reached 2.5 m b/d and as oil production rose; the country's revenues increased again to \$20 billion in 1982 and \$20.4 billion in 1983.

The escalation of Iraqi air attacks on Kharg Island and the Gureh pumping station during 1984 and 1985 again reduced Iran's oil exports to 2 m b/d and 2.2 m b/d respectively. Thus in 1984, the country's oil revenues amounted to \$21.5 billion (MEES, Vol. 27, No. 45, 20 August 1984).

It should be noted that Iran's production capacity, that was estimated at nearly 7 m b/d in the mid-1970s had dropped sharply after 1978 as a result of the depletion of oil fields and several other problems including technical problems associated with the maintenance of production facilities. According to OPEC, the number of operational production wells fell from 530 in 1982 to only 205 in 1986. Again, as a result of Iraqi attacks on oil platforms and shifting lines, Iran's oil exports fell to 600000 to 700000 b/d, as compared with its quota of 2.4 m b/d. Although production and exports recovered later, average daily exports during 1986

remained still only at about 1.5m b/d.

Right before the cease-fire, in 1987-88, the crude price increased from less than \$14 to \$16 /b. In the aftermath of the war, the prices rose to \$31 /b before turning back to less than \$20 in early 1992 (Iran Reconstruction and Economic Growth Report No. 9072, 30 July 1991, Document of the World Bank, P. 37).

As shown in Table 3, from 1980 onwards the damage inflicted on Iran's refineries and export terminals forced the country to reduce her production. The production recovered briefly to 2.7 m b/d in July 1987 before falling back again towards the end of the year. In the first quarter of 1988, Iran's oil production averaged 2.1 m b/d.

After the cease-fire in July 1987, the NIOC started to repair the war-damaged oil industry, including terminals, platforms and other export facilities. The NIOC could now rely on expanding sustainable production capacity to 4 m b/d by March 1993, 4.5 m b/d a year later, and 5.5 m b/d by the turn of the century.

A four-part plan as follows was put into action:

- Drilling activities were increased, including the drilling of new wells and the repair of damaged ones;
- The oil fields were increased to 47, as mandated by the First Five-year Development Plan (FFYDP) and the number of wells to 800;
- 3. Half of the new increased capacity was to be obtained through enhanced recovery methods (including more than 6 billion cubic feet of gas injection) in the onshore fields of southern Khuzestan, and offshore oil fields in the Persian Gulf were to be developed (Second Economic, Social and Cultural Development Plan of the IRI (1995-99, 1996, P. 117).

Iran has the longest coastline of any offshore oil-producing state in the Persian Gulf and was the second largest offshore producer in the region in 1986 when her output averaged 505,000 b/d extracted from 10 fields, and represented 24.8% of her total oil production (AOG, Vol. 17, No. 408, 16 September 1988, P. 41).

Table 3. Iran's oil production (1000 b/d)

1978											
5,242	3,168	1,467	2,316	2,391	2,442	2,032	2,192	2,037	2,300	2,100	
MANUAL DOOR ANDVEN			dit median			to the product ment of				Leaf (Labridge)	

Source: AOG, Vol. XVII, No. 407, 1 September 1988; MEES, Vol. XXVII No. 12, 2 January 1984.

In the period of the First and the Second Development Plans (1988-98), Iran needed to increase her production further and in 1991, during the new era of the open economy, Western oil companies were invited to invest in offshore exploration and development in exchange for long-term lifting contracts on favorable terms.

### Conclusion

One of the main goals of the revolution was to eliminate Iran's dependence on oil and increase the diversity of its export sector. However the damages caused to all sectors of the economy due to external factors, made Iran's dependence on oil revenue even greater in the 1980s. Oil revenue has long played a major role in the growth of the Iranian economy. It has been the primary source of finance to bring about the growth observed in 1970s. The economy continued to be heavily dependent on oil revenue to provide the foreign exchange needed for the development of the country. As a result the economy has become susceptible to petroleum price and quota shocks. The deterioration of international oil prices, and the decline of oil revenue starting in 1982 and worsening in 1986, thus had a large impact and placed serious constraints on the Iranian economy.

The decline in oil revenue was also a result of the reduction of Iranian exports in the mid 1980s, when oil facilities became primary targets of the Iraqis during the war. In 1980s, due to the revolution and the war, the average level of production was less than half of that of the previous decade. Consequently the share of the oil sector in GDP declined sharply from 30 to 40% in the mid 1970s to 9 to 17% in 1980s. Given that oil exports historically represented over 90% of Iran's total annual foreign exchange

receipts, this loss in revenue had a substantial impact on the economy. Consequently, from 1981 to 1986, economic activities once again sank into a deep recession. In 1984, real GNP grew by only 0.2% while real output declined by 1.5% and 8% in 1985 and 1986 respectively (Country Report, by EIU, 1987).

After the end of the war, Iran's oil production increased substantially from 2.3 m b/d in 1987 to about 3.1 m b/d in 1990. Given the existence of considerable petroleum reserves, it seems plausible to assume that the country would keep to be in a healthy position both in the short and in the long term. According to an estimate released by NIOC in January 1985, total proven reserves of the country amounted to 92.85 billion barrels (14-56-14).

On the whole, it is clear that despite being hampered by low oil revenue, Iran has managed to succeed in a costly war with Iraq, to resist pressures from the West and specially the US, and to overcome successfully the various conspiracies. In spite of all these problems Iran is generally recognized today as being politically independent and nonaligned country. As the election of 23rd May 1997 showed, the majority of the Iranians are willing to lend their support to the system for the time being.

### Notes

- 1) It is important to note that, comparative prices, when given, need to be taking inflation into account. An average inflation during the first years of 1970s was 30%.
- 2) During the period between 1950 and 1974, the demand for energy in Western Europe grew by almost threefold and demand for liquid energy by more than twelvefold. The growth of Middle East oil exports, however, was much higher than this -- it

grew by almost 34 times during the 1948-74 period. This was due to the American oil conservation policies and the reorganization of the world oil supplies in the post-war period which led to the replacement of the western hemisphere oil supplies in the eastern hemisphere markets by he Middle East oil. Iran managed to capture a growing share of the market for Middle East oil. Iranian exports grew from 13.5% of total Middle East exports in 1948 to 15.5% in 1960, 22.8% in 1966, and 25.6% in 1974.

- 3) The oil sector expanded primarily in response to the world market rather than domestic demand: for instance, in the US, between 1948 and 1972, consumption tripled, rising from 5.8 to 16.4 m b/d and, in the same period, demand for oil in Western Europe increased fifteen-fold, from 970,000 to 14.1 m b/d, but it was in Japan that consumption increased most dramatically -- 137 times over, from 32,000 b/d to 4.4 m b/d.
- 4) The Iranian revolution was novel. Halliday has observed that: "For the first time in modem history, a revolution has taken place in which the dominant ideology, form of organization, leading persons and proclaimed goals have all been religious in appearance and inspiration". He has further remarked that; "Abstracting [the revolution] for a moment from its religious character, the Iranian revolution appears more familiar". This revolution was made by wide-range alliance of social groups and mobilized against a dictatorial monarchical regime by a charismatic leader through an ideology of revolutionary legitimacy (Abrahamian, Arvand, 'Iran Between two Revolutions', PP. 530-537).

However the novelty of the Iranian revolution lies not only in its religious character, but also for its modern approach. This modernity is evident in four respects.

First, from socio-economic point of view, the society was far more than most other nations who had a revolution. For example, one can recall the situation of Russia in 1917 or China in 1949.

Second, in contrast to all other Third World revolutions, the Iranian revolution took place in the cities.

Third, the Iranian revolution was carried out through political confrontation, not armed conflict.

And finally, the fall of the Shah's regime happened without its having been weakened in any external confrontation, which is normally believed to be necessary for the removal of authoritarian regimes.

From the perspective of twentieth-century revolutions, these modern features of the Iranian revolution are as original as its Islamic character. It should, therefore, be said that the originality of the Iranian revolution resides neither in its traditional nor in its modern character but in the interaction of the two. Halliday, F., 'The Iranian Revolution: Uneven Development and Religious Populism', Journal of International Affairs, Vol. 36, No. 2, Fall/Winter 1982-3, P. 32.

- 5) Sharif-Emami's Government took two serious sleps: First on 10 October, the government announced downward revisions of the \$40 billion budget and the \$20 billion to be spent on nuclear power plants and the canceling of orders for 70 Grumm on F14 and 140 General Dynamics F16 Planes, in order to pay the wage increase granted to telecommunication and State Bank Employee (100% increase, granted 1 October after a brief strike). Next, the government sent troops into the oil fields.
- 6) The US opposition to the army's intervention in domestic politics also played an important role. Carter stated that the US had 'encouraged, to limit the extent of our own ability, public support for Bakhtyar's Governmet'. Similar attempts to dissuade the military from staging a coup were in January during the visit to Tehran of highly placed envoys from Britain, France and the US emissary. Ramasay clark, a former US attorney general, went on to meet Ayatollah Khomaini in France where he declared on 22 November that 99% of Iranians support the Ayatollah. He added: 'we assume that the army will support him too' (Time, 23 April 1979).
- 7) The struggle between Bani-Sadr and his opponents was fought over the following six issues: the hostage crisis, the parliamentary elections, the composition of the Cabinet, the Iraqi war, the

deteriorating economy, and his close involvement with the Mojahedin. The crisis over these issues finally peaked in June 1981. On 10 June, he was dismissed from the Supreme Defense Council and two days later he went into hiding with Mojahedin leaders. On 21st June, the Majlis voted to remove Bani-Sadr from the presidency on the ground of 'incompetence'. The Mojahedin in retaliation launched a campaign of armed attacks on the state, culminating on 28th June in the bombing of the IRP's headquarters. In the years after the ousting of Bani-Sadr, the state weathered a series of major internal as well as external crises. It survived a number of military plots and a new wave of assassinations mounted by the Mojahedin, and beat back the Iraqi invasion (by the end of 1982. the Iranian forces had recaptured Khorramshahr, broken the siege of Abadan, and taken the war across the border). Even so for Iran's new political system 1982 was a year of comparative stability, especially after the third presidential election, and the election of the new Prime Minister.

- 8) PBO, 'The National System of Planning, approved by the Economy Council, 31 December 1981'. mimeo.
- 9) PBO, 'the Summary of Views and Directives of the Economic Council on the Quantitive Goals of Economic-Social Development in the Islamic Republic of Iran for 1361-1381 (1982-2002), approved 30/1/1361 (April 19, 1982)', mimeo.
- 10) The First-Year Macro Economic-Social Culture Development Plan of the Islamic Republic of Iran, 1983-87, mimeo.
- 11) The Bill for the First Economic-Social Cultural Development Plan of Republic of Iran, 11 June 1983, in four volumes, mimeo.
- 12) Spot prices are not always above OPEC prices, indeed they have traditionally been below the official price and Iran cannot be totally dependent on spot sales.
- 13) It was on 22nd June in Helsinki when Yamani declared that he felt that a price of \$18/b for his country's oil was reasonable. He promised also to US official 'not to accept anything abnormal in

Geneva'.

14) This reserve is about 10% of the world total, excluding centrally planned economies [CPEs]. These reserves also include 3.26 billion barrels of condensate in April 1989, it was reported that seismic surveys confirmed substantial new oil and gas structures in the south of the country, which could add 25% to 30% to the country's reserves. Estimates of Iran's proven natural gas reserves increased from 14 to 17 trillion cubic meters (TCM) in March 1990.

### References

- Abrahamian, A., 'Race and Class', Vol. 21, No. 1, 1979.
- Aburdene Obeh, 'US Economic and Financial Relations with Saudi Arabia, Kuwait and the USE', American-Arab Affairs Winter 1983-84.
- Arab Oil and Gas (AOG), Vol. 9, No. 200, 16 January 1980.
- 4. AOG, Vol. 9, No. 201, 1 February 1980.
- 5. AOG, Vol. 9, No. 207, 1 May 1980.
- 6. AOG, Vol. 9, No. 217, 1 October 1980.
- 7. AOG, Vol. 17, No. 408, 16 September 1988.
- AOG, 'The Iraq-Iran War, and the International Oil Market', Vol. 10, No. 225, 1 February 1981.
- 9. Country Report, by EIU, 1987.
- Central Bank of Iran, Annual Report, 1974-75,
  Tehran, Bank Markazi Iran, 1975.
- Documents of the Spy-Nest of the US Embassy in Iran, Iranian Oil Sector Strike, Moslem Students Following the Imam's line, No. 66. AFP, 3 November; 1978.
- 12. Exports Maintained Despite Difficulties', in Financial Times, 1 April 1985, Iran Supplement.
- General Policies, Strategies and Goals of the Second Five-Year Economic, Social and Cultural Development Plan of the Islamic Republic of Iran (1995-99), Plan and Budget Organization, 1996.
- 14. International Herlad Tribune (IHT).
- Iran Reconstruction and Economic Growth. Report, No. 9072, 30 July 1991, Document of the World Bank.
- 16. Keyhan, 7 January 1986.
- 17. Keyhan International (KI).
- Kupehan, A. Charles, "The Persian Gulf and the West', Allen and Unwin, London, 1987.
- 19. Middle East Economic Survey (MEES), Vol 22, No.

- 13, 15 January 1979.
- 20. MEES, Vol. 22, No. 17, 12 February 1979.
- 21. MEES, Vol. 22, No. 20, 1979.
- 22. MEES, Vol. 22, No. 29, 1979.
- 23. MEES, Vol. 25, No. 8, 7 December 1981.
- 24. MEES, Vol. 25, No. 15, 25 January 1982.
- 25. MEES, Vol. 25, No. 33, 31 May 1982.
- 26. MEES, Vol. 26, No. 36, 20 June 1983.
- 27. MEES, Vol. 27, 26 November 1984, P. A1.
- 28. MEES, Vol. 27, No. 45, 20 August 1984.
- 29. Petroleum Intelligence Weekly (PIW), 22 January 1979.
- 30. PIW, 24 Septemeber 1984.

- 31. Supplement to MEES, Vol. 22, No. 46, 3 September 1979.
- 32. Time Journal (TJ), 6 February 1979.
- 33. The Bill for the First Economic-Social Cultural Development Plan of Republic of Iran, 11 June 1983, in four Volumes, mimeo.
- 34. The Economist Intelligence Unit (EIU), July 1980, by Fereidun Fesharaki, 'Revolution and Energy Policy in
- 35. Terzian, P., 'OPEC: The Inside Story', Zed Books Ltd., 1985.
- 36. Warren Christopher et al. 'American Hostages in Iran: The Conduct of a Crisis', new Haven: Yale University Press, 1985.