

CHAPTER FOUR

ENERGY

Iran's average crude oil production, according to quotas determined by the OPEC, reached 3.6 million barrels per day (mb/d in 1380), showing 2.4 percent reduction compared to 1379. In the review year, Iran's crude oil export decreased by 5.8 percent, while export of petroleum products increased by 20.4 percent and reached 218 thousand barrels per day.

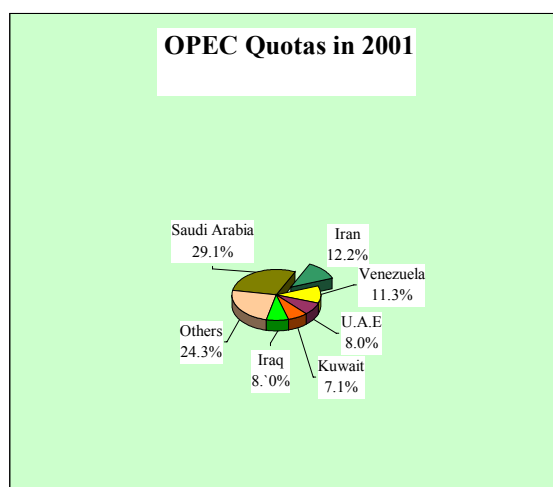
The increasing trend of crude oil prices which was started in the early 1999 stopped and kept a decreasing trend in December 2000. There were negligible fluctuations in the oil prices during first, second and third quarters of 2001. However, after September 11 events and the deepening of economic recession, especially in the United States, the crude oil prices started to decrease significantly. To picture this, the monthly average price of the OPEC basket, which was above the minimum range specified by the OPEC (\$ 22 per barrel) since November 1999, slipped in the last quarter of 2001 and in the first two months of 2002 to less than \$20. In March 2002, the average price of the OPEC basket increased to \$22.64 per barrel.

		AVERAGE SPOT PRICES FOR SELECTED CRUDES						(\$/barrel)
Specifications	Average 2000	2001					Q1 2002	
		Q1	Q2	Q3	Q4	Average		
Saudi Arabia	Light	26.85	23.63	25.39	24.56	18.66	23.06	20.54
	Heavy	25.20	22.21	24.21	23.34	17.86	21.90	19.71
UAE	Dubai	26.20	23.67	25.11	24.17	18.38	22.83	20.18
OPEC crude basket	-	27.55	24.39	25.58	24.16	18.27	23.10	19.95
England	Brent	28.39	25.77	27.23	25.43	19.31	24.43	21.14
U.S.A.	WTI	30.36	28.72	27.88	26.78	20.36	25.94	21.58

Source: OPEC Monthly Bulletin, May 2001 & April 2002

OPEC

The OPEC crude oil production, with 2.3 percent reduction reached 30.2 million barrels per day in 2001. At the same time, production of the OPEC's Middle East members fell by 3.6 percent and reached 20.2 million barrels per day, constituting approximately 67 percent of the OPEC crude oil production. Production of other OPEC members amounted to 10 million barrels per day, which showed 0.3 percent growth as compared to 2000.



In the review year, Saudi Arabia's crude oil production reached 8.8 mb/d, which indicated a reduction of 3.8 percent compared to 2000. The share of the Saudi Arabia production in the OPEC's total crude oil production was 29.1 percent. Iran and Venezuela with production shares of 12.2 and 11.3 percent, respectively, were the second and the third producer of the OPEC in 2001.

OPEC AVERAGE CRUDE OIL PRODUCTION				(thousand b/d)	
	2000	2001	Percentage change [○]	Share (percent)	
				2000	2001
Saudi Arabia	9,115	8,768	-3.8	29.5	29.1
Iran	3,772	3,688	-2.2	12.2	12.2
Iraq	2,624	2,414	-8.0	8.5	8.0
Kuwait	2,169	2,142	-1.2	7.0	7.1
United Arab Emirates	2,491	2,422	-2.8	8.1	8.0
Qatar	796	783	-1.6	2.6	2.6
Middle Eastern Members	20,966	20,217	-3.6	67.9	67.0
Venezuela	3,321	3,418	2.9	10.7	11.3
Nigeria	2,103	2,148	2.1	6.8	7.1
Indonesia	1,456	1,410	-3.2	4.7	4.7
Libya	1,475	1,425	-3.4	4.8	4.7
Algeria	1,579	1,563	-1.0	5.1	5.2
Other members	9,934	9,964	0.3	32.1	33.0
Grand Total	30,901	30,181	-2.3	100.0	100.0

Source: BP AMOCO for 2002

To stabilize the crude oil market and price of the OPEC basket within the target band, OPEC held several meetings in 2000 and 2001. In its 112th meeting which was held on November 12-13, 2000, in Vienna, members agreed on 26.7 mb/d production ceiling. This agreement was effective until the end of January 2001. The 113th meeting took place on January 17, 2001 in Vienna, aiming at curbing the decreasing trend of the crude oil prices. In this meeting the OPEC's production was reduced by 1.5 mb/d and set on 25.2 mb/d. The economic recession in industrial countries and the seasonal reduction in the demand for crude oil made the OPEC to reduce one million barrels of its production ceiling, limiting to 24.2 mb/d, on the 114th meeting which was held on March 16-17, 2001. In the 115th meeting, which was held in Vienna on June 5, 2001, OPEC didn't change its production ceiling due to the market condition. In 116th meeting, the OPEC reduced the production ceiling by one million barrels and it was limited to 23.2 mb/d. In 118th meeting on November 14, 2001, the production ceiling was reduced by 1.5 mb/d and reached 21.7 mb/d.

OPEC MEMBER'S CRUDE OIL PRODUCTION QUOTA						(thousand b/d)
	2001				2002	
	January	February and March	April to August	September to December	January to June	
Saudi Arabia	8,674	8,189	7,865	7,541	7,053	
Iran	3,917	3,698	3,552	3,406	3,186	
Venezuela	3,077	2,902	2,786	2,670	2,497	
UAE	2,333	2,201	2,113	2,025	1,894	
Nigeria	2,198	2,075	1,993	1,911	1,787	
Kuwait	2,141	2,021	1,941	1,861	1,741	
Libya	1,431	1,350	1,296	1,242	1,162	
Indonesia	1,385	1,307	1,255	1,203	1,125	
Algeria	853	805	773	741	693	
Qatar	692	653	627	601	562	
OPEC production ceiling (1)	26,700	25,201	24,201	23,201	21,700	

Source: www.opec.org

(1) Excludes Iraq crude oil production.

Iran Crude Oil Production

In 1380, Iran's average crude oil production, in adherence to the OPEC quotas, amounted to 3.6 mb/d, showing 2.4 percent reduction compared to 1379. In early 1380, Iran's production quota was 3.7 mb/d, which with a downward trend reached 3.2 mb/d in the last quarter of the year. In other words, Iran's crude oil production quota decreased more than 500 thousand barrels per day in the review year.

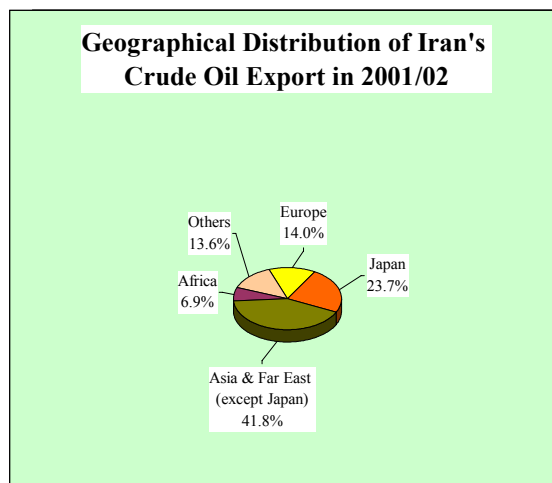
Exports

In 1380, Iran's petroleum exports (including crude oil and oil products) fell by 4 percent to reach 2.4 mb/d, 91 percent of which was related to crude oil and the remainder to export of oil products. In the review year, crude oil export with 5.8 percent decrease reached 2.2 mb/d. Meanwhile, export of oil products rose by 20.4 percent to 218 thousand barrels per day.

Geographical Distribution of Crude Oil Export

Crude oil exports to Asia equaled 65.5 percent of the total exports in 1380, 41.8 percent of which was exported to Asia and Far East and 23.7 percent to Japan.

The share of crude oil exports to European countries decreased to 14 percent. Meanwhile, crude oil export to Africa was 6.9 percent, and 13.6 percent was exported to other countries including Mediterranean countries.



Domestic Price of Oil Products

According to the 1380 Budget Law, the average price of oil products went up by 10 percent. Regular gasoline from Rls. 385 per liter increased to Rls. 450, gas oil from Rls. 110 per liter to Rls. 120, kerosene from Rls. 110 to Rls. 120, and fuel oil from Rls. 55 to Rls. 62.

Domestic Consumption of Oil Products

In 1380, consumption of oil products averaged 1,330 thousand barrels per day, indicating 3.1 percent rise as compared to 1379. Consumption of oil products (excluding kerosene) increased in this year. Consumption of other products and gasoline showed the highest rates of increase of 10.5 and 7.5 percent, respectively. In this year, gas oil consumption reached 421 thousand barrels per day, which constituted 31.6 percent of total oil product consumption. Although world oil consumption remained unchanged in 1380, oil product consumption increased by 3.1 percent in Iran, owing partly to the economic growth and development in the country, and partly to the relatively low prices which led to inappropriate consumption.

Investment in Oil Sector

Based on the Treasury data of the Ministry of Economic Affairs and Finance, development outlays to oil sector was estimated at Rls. 88.8 billion, showing 48.7 percent growth as compared to 1379.

In the review year total development expenditures allocated to oil sector was in the form of national expenditure, and to design and implement the government's policies in oil, gas, petrochemicals and allied industries. Apart from the mentioned expenditure, it is estimated that about Rls. 26.3 billion has been paid out in the form of national expenditure for Energy Research

Program. On the basis of data provided by the Ministry of Petroleum, total investment in oil sector equaled Rls. 5,546.2 billion in 1380.

Natural Gas

In 1380, natural gas production (excluding the gas injected into oil wells) with 3.7 percent growth compared to 1379, reached 86.3 billion cubic meters. Domestic consumption of natural gas grew by 5.9 percent to reach 66.6 billion cubic meters. The natural gas allocated for operational uses, liquefied and flared increased by 0.8 percent against 1379 and reached 23.8 billion cubic meters. In this year, a total of 4.5 billion cubic meters natural gas was imported and about 398 million cubic meters was exported. The volume of gas injected into oil wells, with 5.8 percent growth, reached 27.5 billion cubic meters. In 1380, in line with government policies to substitute natural gas for other fuels, the number of subscribers increased by 550 thousand and exceeded five million subscribers.

Electricity

In 1380, electricity production with 7.2 percent growth, reached 130 billion kw/h. Out of total electricity generated, 124 billion kw/h (95.6 percent) was generated by the power plants affiliated to the Ministry of Energy and 5.8 billion kw/h electricity (4.4 percent) was generated by other institutions.

In the review year, 81.1 billion kw/h (62.4 percent) of the electricity was generated by steam generators, about 37.8 billion kw/h (29.1 percent) by gas and combined cycle plants, 5.1 billion kw/h (3.9 percent) by hydropower plants and 0.3 billion kw/h (0.3 percent) by diesel plants. As a result of sufficient rainfall, electricity generated in hydropower plants increased by 38.5 percent (the highest growth) and in diesel power plants decreased by 9.1 percent (the highest reduction).

In 1380, electricity consumption with 7.5 percent growth, reached 97.2 billion kw/h. The highest share of growth in consumption was related to agriculture sector. Electricity consumption of this sector soared from 9.1 billion kw/h in 1379 to 11.1 billion kw/h, indicating 21.1 percent increase.

Average price of electricity went up from Rls. 88 per kw/h to Rls. 97 per kw/h, showing 10 percent increase. The per capita consumption of electricity was about 1,497 kw/h in 1380, which was about 66 percent of world per capita (2,272 kw/h).

	CONSUMPTION OF ELECTRICITY			(million kw/h)	
	1379	1380	Percentage change	Share (percent)	
				1379	1380
Household	31,266	32,891	5.2	34.6	33.9
Industrial	28,937	30,739	6.2	32.0	31.6
Commercial	17,262	18,345	6.3	19.1	18.9
Agriculture	9,147	11,079	21.1	10.1	11.4
Street lighting	3,754	4,117	9.7	4.2	4.2
Total	90,366	97,171	7.5	100.0	100.0

Source: Ministry of Energy

Investment

According to the estimates, development expenditures of the electricity sector increased by 47.9 percent with respect to the actual development expenditures of this sector in 1379, and reached Rls. 673.8 billion. The mentioned credits were totally allocated in the form of national credits. It is estimated that, out of the mentioned amount, Rls. 429.7 billion (63.8 percent) was allocated to electricity generation program and Rls. 244.1 billion to electricity distribution program.

At the end of 1380, the installed capacity of power plants reached 34,222 Mw and electricity was distributed among more than 45 thousand villages. In the review year, a total of 1,155 new villages, with 32.6 thousand households, were provided with electricity.