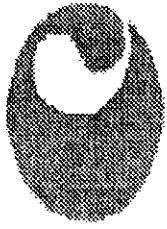


# Prospect of production & Export of the Caspian sea crude (export possibility via Iran)

Table 3

	2000	2001	2002	2003	2004	2005	2006
<b>Azerbaijan</b>							
Production	340	415	519	659	831	1012	1191
Domestic demand	164	161	159	156	153	150	155
<b>Export</b>	176	254	360	503	688	862	1036
North route of pipelines in the Azarbayejan's oilfields	45	50	100	150	200	200	200
West route of pipelines in the Azarbayejan's oilfields	115	160	200	200	200	200	200
Main export route					150	250	250
Total evacuation route	160	210	300	350	550	650	650
Extra volume after export	16	44	60	153	138	212	386
<b>Export possibility via Iran</b>	9	26	36	92	83	128	232
<b>Turkmenistan</b>							
Production	130	145	150	150	176	162	166
Domestic demand	87	88	88	89	90	91	92
<b>Export</b>	43	57	62	61	86	71	74
Surplus volume	43	57	62	61	86	71	74
U.S. Oil company	14	19	21	20	24	24	25
<b>Export possibility via Iran</b>	29	38	41	40	57	47	49
<b>Kazakhstan</b>							
Production	715	799	933	1071	1115	1345	1425
Domestic demand-export via Russia	276	284	293	301	310	320	329
<b>Export</b>	439	514	640	769	804	1025	1095
Pipe line CPC	60	60	424	424	588	604	604
Available export route through Russia	210	170	170	170	170	170	170
Evacuation via railroad TCO and east	120	120					
Surplus volume after evacuation	109	164	46	175	46	251	321
With U.S participation	188	225	300	395	410	498	510
Tengiz Oilfield	250	300	400	500	500	600	600
Tulpar oilfield					20	30	40
Total - Karachagank				100	150	200	250
<b>Export possibility via Iran</b>	31	118	31	111	29	153	206
<b>Total export via Iran (excluding U.S.)</b>	119	183	109	234	169	333	488
Total swap with Iran	119	183	168	389	270	534	782
Total forecast without ILSA	168	265	168	389	270	534	782
<b>Total production</b>	1185	1359	1602	1880	2132	2519	2782
<b>Total consumption</b>	527	533	540	547	554	561	576



# investment & operating costs for transit of 35000b/d crude from Turkmenistan and kazakistan to Neka via sea routes and pipeline

Table 2

Tanker		Investment cost . 1.2	Investment operating . 1.2	Discount costs	Income	Net profit	investment return period		Note
Cap.1000 tons	No.	million \$	million\$/year	Dollar	mil. \$/year	mil. \$/year	year	month	
5	66	656.7	178.9	2	255.5	76.6			over 20
12	33	688.2	156.93	3	383.25	204.35	8	6	
40	9.2	466.2	88.9	2	255.5	166.51	7	7	
				3	383.25	294.26	5	4	

Pipeline diameter	Investment cost	Operating cost	Discount rate	Income	Net profit	Investment return period		Note
						Investment return	period	
Inch	million\$	million\$/year	Dollar	mil.\$/year	mil. \$/year	years	months	
28	590.95	20.88	2	255.5	234.62	7	1	
30			3	383.25	204.35	5	5	
28	584.7	17.16	2	255.5	98.57	6	11	
			3	383.25	226.32	5	5	
28	590.72	15.66	2	255.5	239.84	6	11	
34			3	383.25	367.59	5	5	





Picture 3

# REFINING CAPACITY



1000 B/D

Table 1

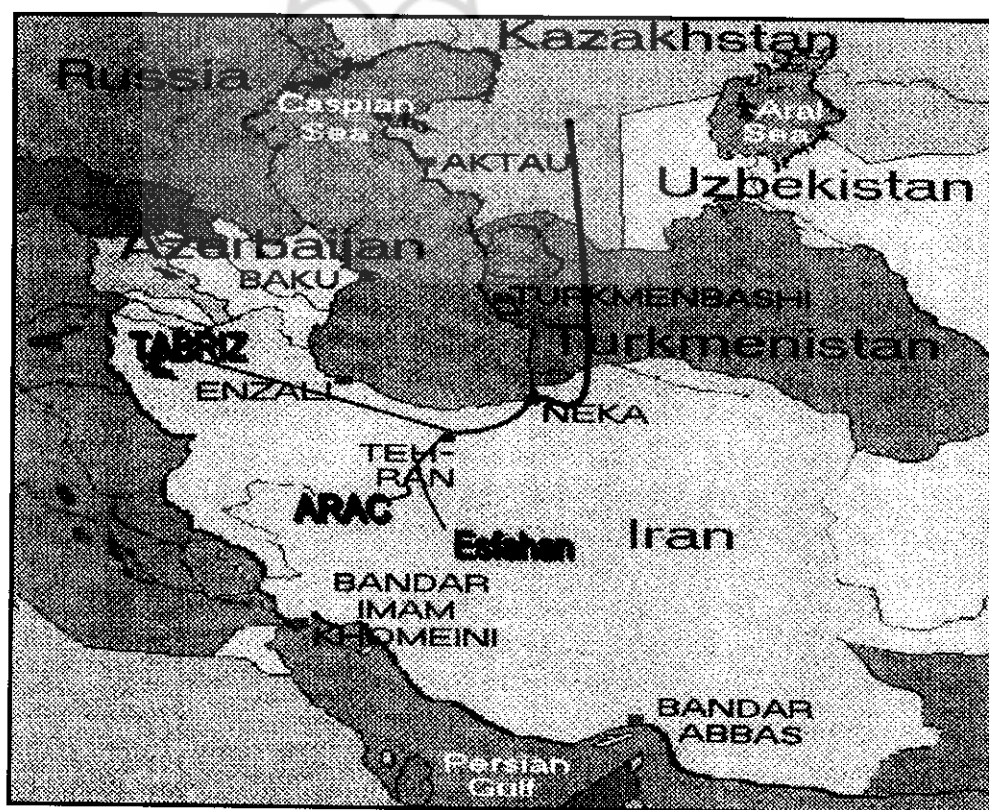
NAME OF REFINERIES	NOMINAL CAPACITY	POTENTIAL CAPACITY
TEHRAN	220	250
ESFAHAN	200	320
ABADAN	350	400
SHIRAZ	40	50
LAVAN	20	30
TABRIZ	110	115
KERMANSHAH	20	25
ARAK	150	175
BANDAR ABBAS	232	250
<b>TOTAL</b>	<b>1342</b>	<b>1715</b>

the crude oil of these refineries are mostly supplied by oil fields which is located in south of Iran . \*





Picture 1



Picture 2





Iran at Kharg, Lavan and Sirri terminals are more than 5 mb/d and needs no fresh investment.

Besides points mentioned above there is yet another plan that has been taken seriously by Iran. Building one or two 200,000 b/d new refineries to process the incoming crudes and using their yields in the north of Iran.

Eventually by using the present facilities and installations an average of 780,000 b/d of crudes from the three countries can be transmitted by 2006.

I would now like to touch on the subject of transmitting natural gas through Iran. As you may know, the Asian market especially that of the south and east has a clear prospect of an increasing demand for natural gas as well. It is worth noting that the share of gas consumption in the whole of energy demand of this continent is estimated to increase from 21% (470 bcm) in 1996 to 29% (580 bcm) in 2010. It therefore follows that natural and economical

market for the surplus gas of Caspian region will not only be Europe but Asia too.

Iran which by itself accounts for 15% of the world gas reserves can along with gas-rich Turkmenistan provide for a great part of European gas market.

On the other hand in view of 8 August 96 agreement for sale of gas ratified between Iran and Turkey, there is a chance that the Turkmen gas be utilized in the northern parts of Iran and equivalent volume of Iranian gas, tapped from its southern field, be transmitted to Turkey and Europe.

In choosing the routes for the transmission of Caspian region gas to Europe and Asia there seems to be certain interference from some countries who give priority to their political interest rather than that of economic interest of the countries of the region. This can be very destructive for the economies of these countries.

I would like to emphasize that

Iran does realize its responsibility in providing for part of ever increasing demand of gas in the world and by developing its recovery capacities and creating acceptable facilities for the transmission of gas resources of the neighbouring countries to the markets will fulfil its obligation. In this direction connection of the Turkmen gas pipeline to the existing network in Iran and the ones under construction to Europe and the Indian subcontinent will be covered.

It is obvious that the route through Iran is not the only way for the export of oil and gas of Central Asia and the Caucasus. There will surely be other routes created. This route is among the cheapest ones. However some industrial states will first try creating more difficult and costlier ones and then propose the route through Iran for their own counterparts in the region. This is because creation of new facilities for such a transmission is of both economic and political considerations. The political one is decided by governments and the economic by companies and investors. For all practical purposes a blend of these two aspects is necessary. And any one aspect overweighing the other would be detrimental. Especially if the political aspect is overemphasized and the economic side is ignored then the main target which is the improvement of the economic situation of the central Asian countries will not be achieved.

As mentioned earlier we will welcome any route that would secure the bilateral and multilateral regional relations which would ensure the real interests of the countries and facilitate their economic growth. This way we believe the security of supply of energy of the region to the world would be guaranteed. ■

Sincere collaboration and just relationship among these groups can expedite the energy development of the region. Obviously these resources must first and foremost be at the service of economic growth of the countries of the region. However since the identified energy resources of the area is more than the domestic demands of the countries in question, export of the surplus quantities can supply certain energy needs of part of the world and help expedite economic growth of the countries of the region as well.

This subject, that is economic growth of the countries, is of particular importance and alongside good neighbourly relations, works as the best guarantor of security of supply of energy in the vicinity.

It therefore follows that transmission of these resources to the world markets is a necessity and such a task must be based on well planned studies and forecasts so that most appropriate markets, routes and the cheapest means are selected for the purpose.

A comprehensive analysis in evaluating various possible routes for such a transmission allows 14 main routes. These include 4 northern, 4 western, 3 seabed, 1 eastern, 1 southern- east and 1 southern.

Here I am not trying to present a comparative analysis of the shortest and the best route by taking into account various factors such as economy, security, technical risks or environment for the Caspian littoral countries. There is no need for such a thing because it is clear that some western countries under the leadership of the U.S. are trying to derail the studies and plannings of this transmission from the natural path to serve their own vested interests.

What I mean to say is nothing

more than an emphasize on the evaluation of the fact that volume of such a transmission must naturally be based on the expectable demand of the consuming markets.

About the forecast of the trend of demand for energy in the first two decades of the next century numerous evaluations have been put forth. Almost all these evaluations uphold that the rate of growth in consumption of energy, especially oil, in east and southeast Asian countries will be higher than that of the rest of the world.

Following is a forecast presented by Energy Information Administration.

The fundamental question is what role the Islamic Republic of Iran can play in the next decade to provide for the huge and growing markets of south and east Asia.

In the oil sector, Iran can expand its production capacities within OPEC's framework to secure a significant part of the need of that region. At the same time Iran, because of its geopolitical and geoeconomic situation does realize that it must assume the important role of transmission of hydrocarbon resources of Turkmenistan, Kazakhstan and Azerbaijan to markets of the south and east Asia.

Bearing in mind the key factors in choosing a desirable route, the Islamic Republic believes that, the southern path across Iran into the Persian Gulf is one of the most favourable ways which can be implemented in three stages.

#### **Stage one: Crude Oil Swaps using Tehran and Tabriz refineries.**

Crude oil can be shipped to the northern ports of Iran from Azerbaijan, Turkmenistan and Kazakhstan and then to Tehran and Tabriz refineries and swap quantities

can be delivered at the southern ports of Iran. The forecasted capacity of the 390 Km pipeline carrying the crude from Iran's Neka port of the Caspian is estimated at 340000 b/d. The cost involved to build such a pipeline is about 400 million dollars. It is worth noting that such a capacity is easily expandable with the provision of minimum investment.

#### **Stage two: Crude Oil Swaps using Esfahan and Arak refineries**

Using this method a volume of 450000 b/d of crude can come by the sea or through a pipeline from west or east of the Caspian to Tehran. Reversing the function of existing pipelines between Tehran-Esfahan and Tehran-Arak can take care of the task. Cost of building a pipeline either from Azerbaijan to Tehran or Kazakhstan, Turkmenistan to Tehran will be 300 to 500 million dollars.

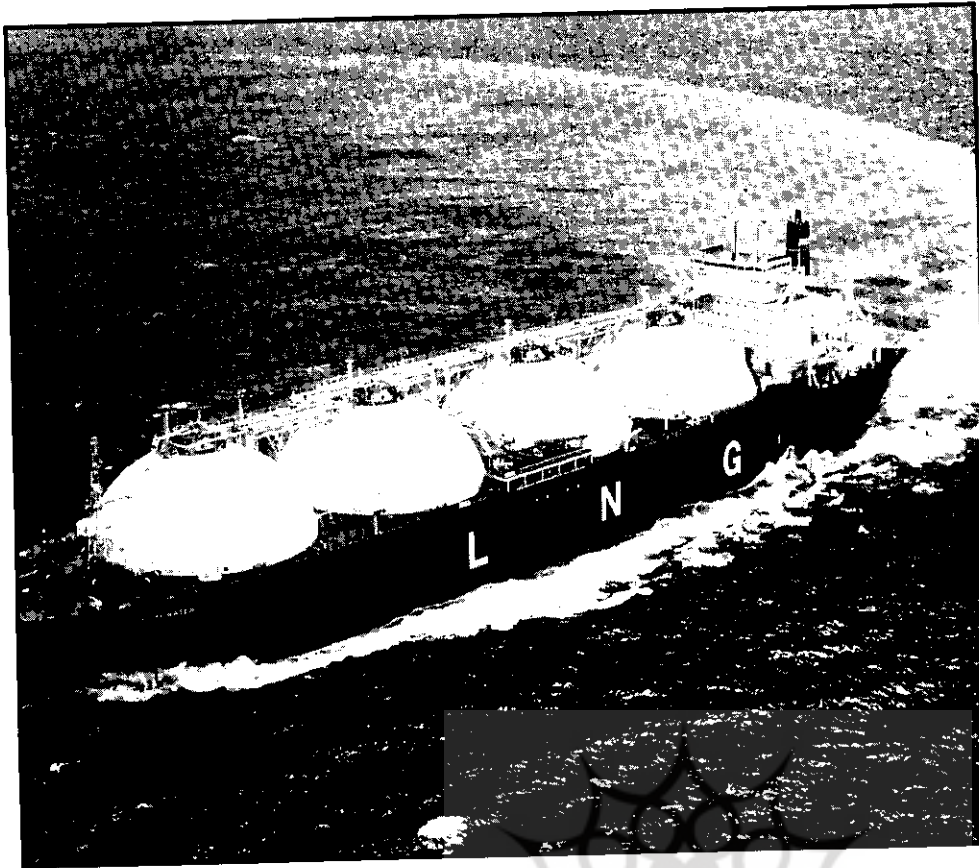
Here I would like to draw your kind attention to the financial analysis of investment and transmission of crude oil from Turkmenistan and Kazakhstan to Neka shown in Table (2).

Also please see picture (1) about implementation of first stage of swap. In picture (2) the second stage of swap is depicted.

#### **Stage three: Direct Transfer of Crude of Turkmenistan and Kazakhstan to the Persian Gulf, through Kharg and other terminals of Iran.**

Alongside primary studies for the transmission of crudes directly into the Persian Gulf, the Ministry of Petroleum of Iran has undertaken a study of probable routes and means depicted in picture(3).

The important point to note is that the present loading capacities of



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**S. GHOLAMHOSSEIN  
RASSANTASH  
PRESIDENT, INSTITUTE  
FOR INTERNATIONAL  
ENERGY STUDIES  
(I.R.IRAN)**

## Iran's role in transmitting oil & gas to East & South Asia in the new decade

In the name of God  
the Compassionate the Merciful

Undoubtedly in the Politico-energy- geography of the world, Iran is strategically placed. Because of its prominent peculiarities some of which are unique, whether from its ancient civilization or its geographical or its extensive potentials points of view, Iran has always been at the center of attention of the world. Due to the mentioned points, other countries have always closely watched Iran's plans and policies.

After the downfall of the Soviet Union Iran's geopolitical and geoeconomic importance has become even more significant. the geostrategical consequences of that

downfall in parallel with the enhancement of the level of relationships of Iran with the Muslim Arab neighbours in the Persian Gulf and the Sea of Omman as well as with the Indian subcontinent has given rise to new regional orders and hence to the expansion of politico-economic capacities with the governments of those countries and that of the Caspian Sea States.

The best example for these new developments is the plan of transmisison of oil and gas of Caspian Sea region to the Persian Gulf and Sea of Omman for securing the energy needs of South and East Asia. Due to the fact that the resources of the Caspian region remain largely untapped and in the

past there were political, reasons that hampered their better use, in the 90s they turned into the world's energy focal point and attracted the attention of all specialists and knowledgeable people and became a center for international challenges and rivalries.

I am of the belief that in order to develop the Hydrocarbon fields of that region the experiences of the past decade should be taken into view and the reasons for any success and failure be analysed. For this purpose cooperation of three groups is necessary: First, the owners of the resources. Second, countries that have access to open seas and consuming markets. And Third, the ones that possess necessary technical knowhow and financial capabilities.