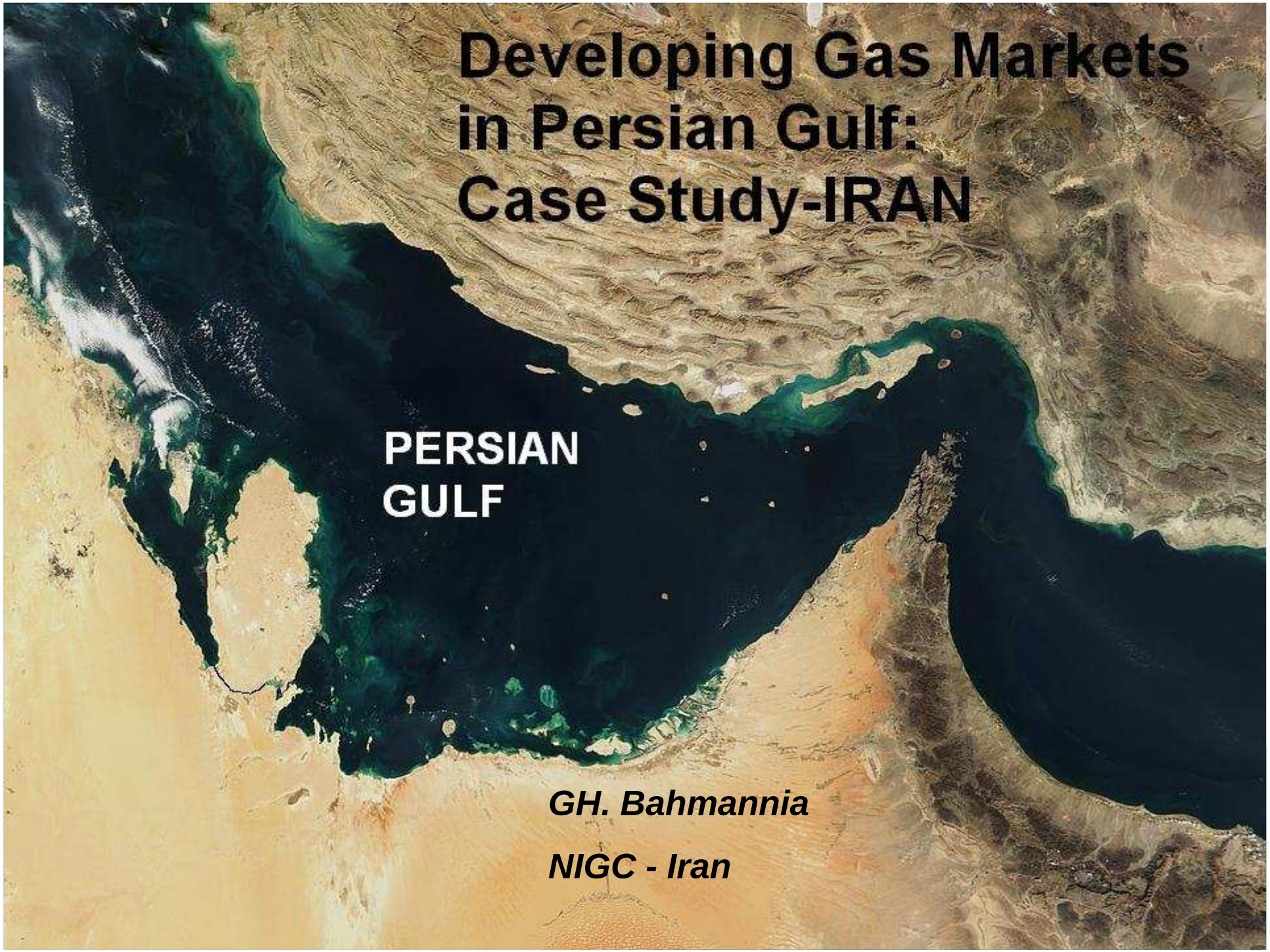


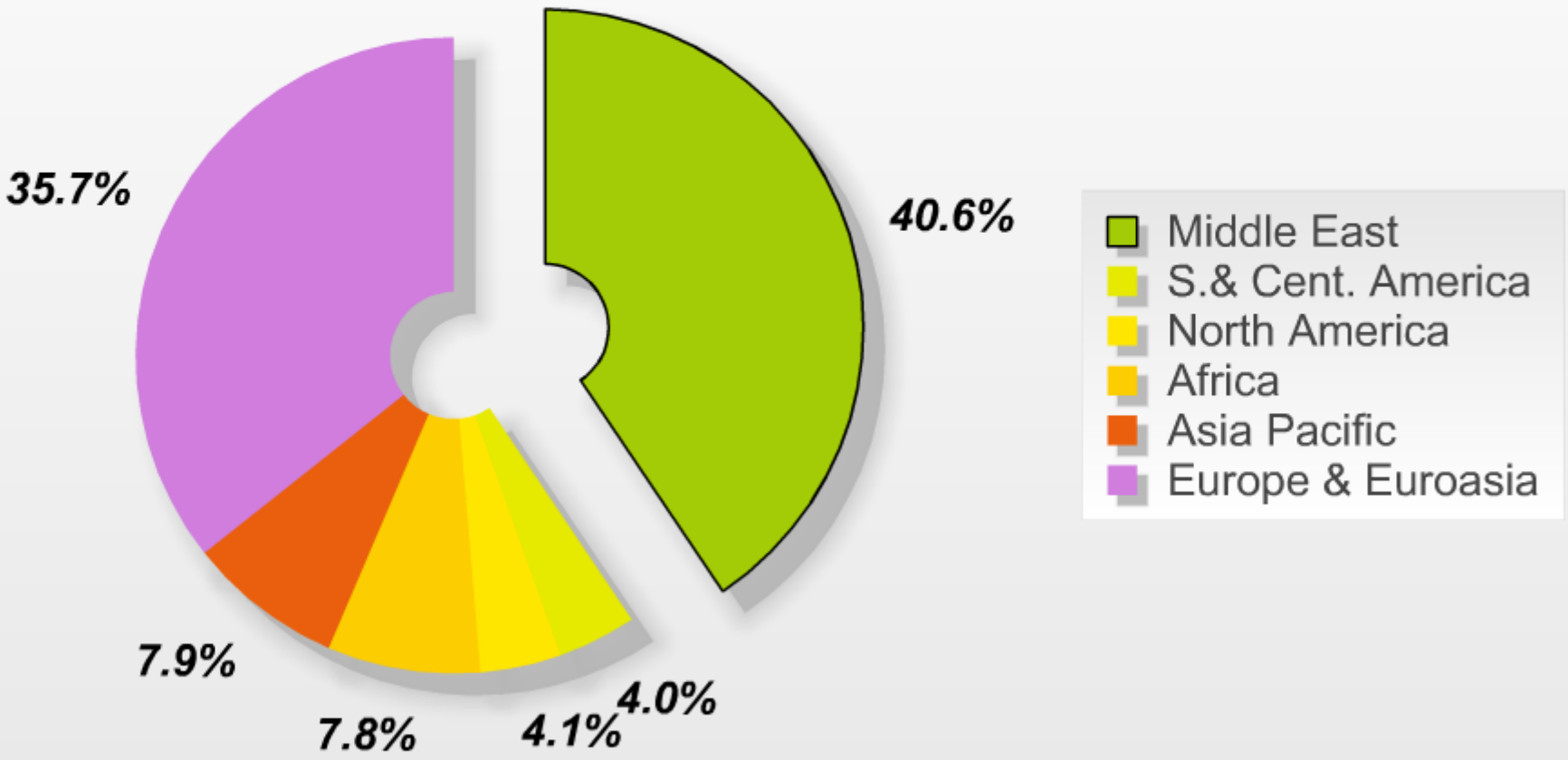
GH. Bahmannia

NIGC - Iran

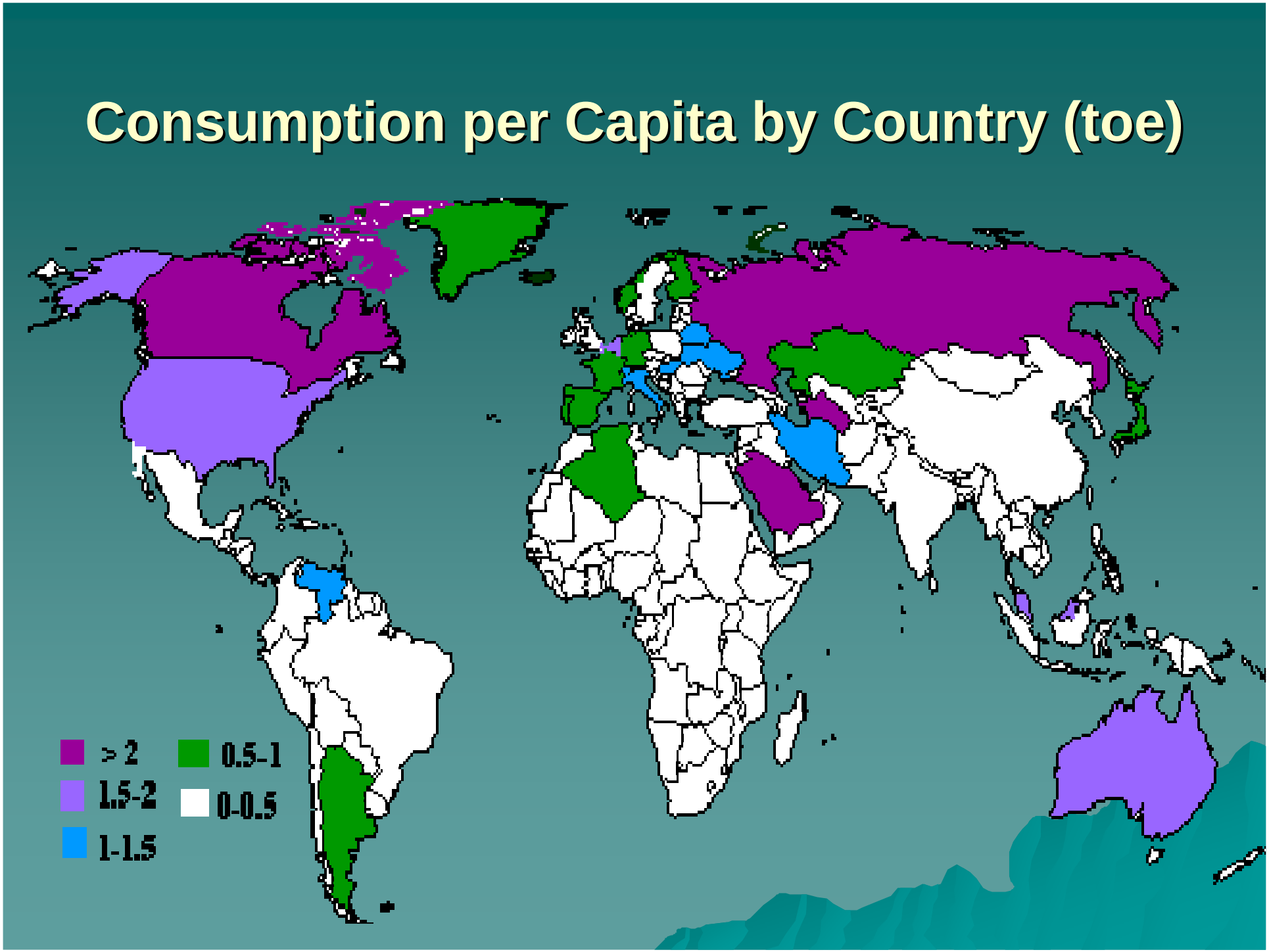
Key Elements

- The Role of Persian Gulf in Global Natural Gas Energy
- Iran and Its Energy Policy , Institutional Structure
- Gas Supply-Demand Outlooks
- Developing Gas markets in IRAN
- Key Natural Gas Industry Projects
- Legal & Regulatory Framework
- Iranian Natural Gas “Vision” for 2025 ,Issues & Challenges
- Summary

Global Proven Gas Reserves by Region 2005e



Consumption per Capita by Country (toe)



Average Growth of Global Demand Estimation

% , Bcm

Model/Year	2005	2010	2015	2020	2025
OWEM %	2.9	3.1	3.1	3.2	3.2
	2745	3136	3657	4265	4987
IEA %	2.5	2.5	2.5	2.5	2.5
	2850	2988	3356	3809	4274
DOE/EIA%	2.5	2.5	2.5	2.5	2.5
	2921	2973	3341	3794	5427

Natural Gas Production Trend 2010-2025

%

Region - Countries	2001	2010	2015	2020	2025	Ave. Growth % /Year
North America , Mexico	781	838	866	929	951	0.8
Western Europe	289	254	254	252	277	-2.0
Japan, Australia	43	65	84	91	96	3.5
Total	1113	1157	1204	1272	1324	0.7
Russia Federation	728	855	988	1121	1260	2.3
Eastern Europe	25	25	23	23	23	-5.0
Total	753	880	1011	1144	1283	2.2
Asian Developing Countries	249	289	317	371	436	2.4
Middle East	235	277	343	442	532	3.5
Africa	130	229	280	337	399	4.8
Central & South of America	102	156	201	243	300	4.6
Total	716	951	1141	1393	1667	3.6
Global	2582	2988	3356	3809	4274	2.1

IRAN At a Glance

1. Country overview

- Iran,located in Middle East between the Persian Gulf and Caspian Sea with the size of 1,648,195 sq. km. in area.
- From north to the south of the country, climate and temperature change abruptly (-20°C, +50°C). Central and Southern Iran is dry and hot with low precipitation. On the whole, it has four distinct seasons. The southern part, nearby Persian Gulf, where Oil and Gas reserves is situated has long, hot and humid summers and moderate winters. The northern Iran is dry and cold with high population.
- Population is 69.0 million in the year 2004 and the capital is Tehran. Majority of population is in north, and middle region of Iran.


to Europe
Georgia
Armenia
Azerbaijan
Turkey
Cyprus
Syria
Lebanon
Jericho/Gaza
Iraq
Iran
to Asia
Jordan
Kuwait
Bahrain
Egypt
Qatar
U.A.E.
Saudi Arabia
Oman
to Africa
Yemen
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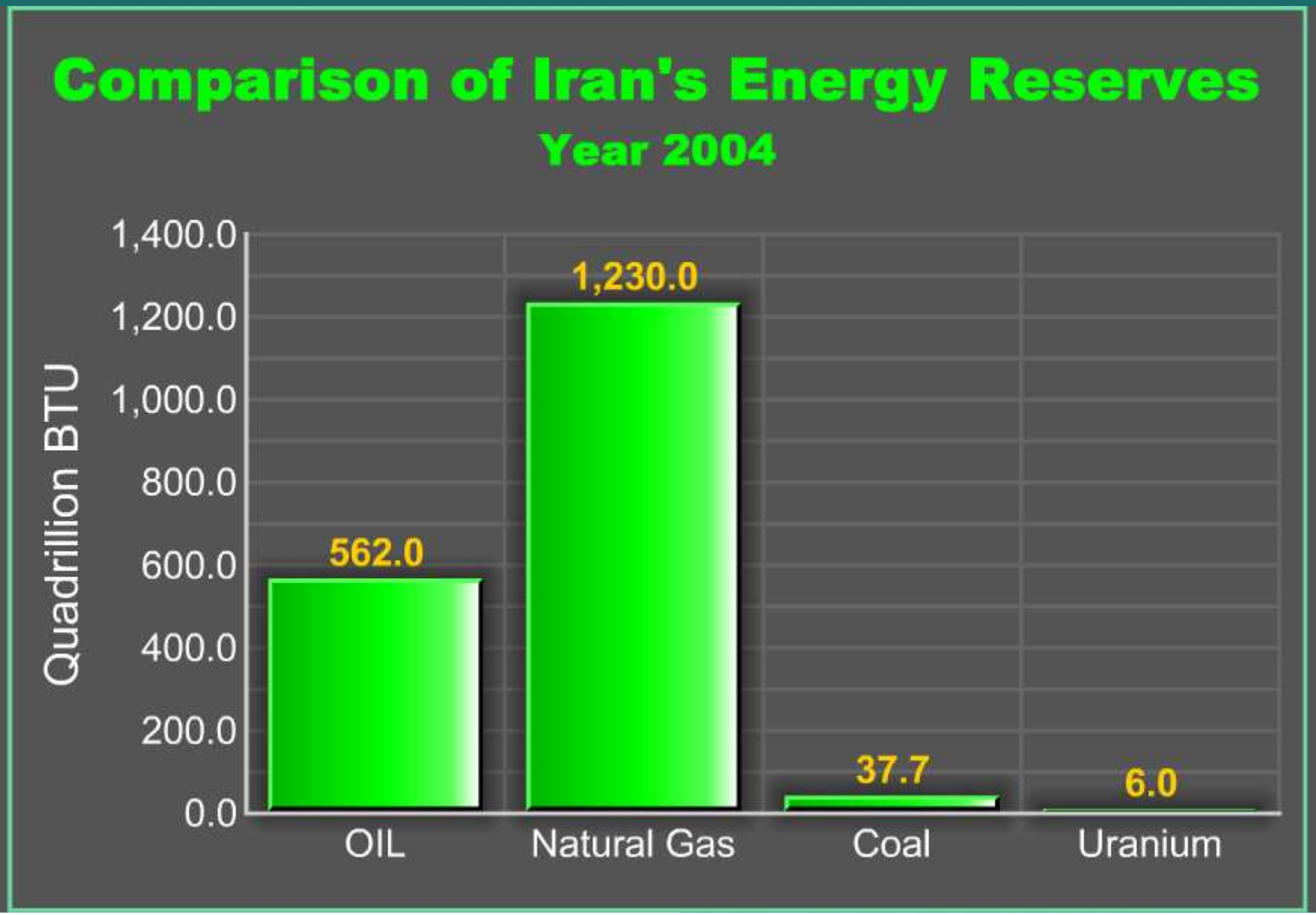
2. Economy Overview

ECONOMIC INDEX	2000	2001	2002	2003	2004	2005 Est.
Population (millions)	56.2	60.1	64.7	66.4	68.1	70.1
GDP (US $ billions)	90.1	101	113.7	137.1	155.4	199.1
GDP Growth (%)	3.7	5.5	7.4	6.7	5.8	5.8
Inflation Rate (%)	18.7	18.1	15.8	15.6	14.8	14.0
GDP per Capita (US$)	2.2	3.1	5.7	5.2	4.1	4.0

- The Real GDP (2004E) is about US$155.4 billion and GDP Growth Rate is about 6.7% for 2003E, 5.8% for 2004E and 5.8% for 2005F. Real GDP for 2005E estimated US$199.1 billion.
- Inflation Rate for 2004E is 14.8% and for 2005E is 14.0%
- Iran's economy relies heavily on oil export revenues - around 80-90 percent of total export earnings and 40-50 percent of the government budget.
- Iran is attempting to diversify its economy by investing some of its oil revenues in other areas, including petrochemicals. In 2004, non-oil exports rose by a reported 9 percent.
- Large-scale state producers.
- subsidies on foodstuffs, gasoline, natural gas, electricity, etc are paid annually to support of people and domestic producers.

IRAN Energy Situation



- OIL : Iran is OPEC’s second largest oil producer and holds 10 percent of the world’s proven, conventional world oil reserves. Iran held 125.8 billion barrels of proven oil reserves as of January 1, 2005, roughly 10 percent of the world's total.
- Gas: Iran as a major state in Persian Gulf has the world's second largest natural gas reserves (around 15.3%, after Russia).
- Uranium: Iran has limited Uranium reserves as energy primary sources (6.0 Quadrillion BTU). Uranium resources of Iran are not considered a rich one.
- Coal: Iran has limited recoverable coal reserves (2003E) of around 461.9 million short tons and has coal production capacity (2003E) of around 1 million short tons. Coal consumption (2003E) in Iranian major industries is about 1.8 million short tons per year.

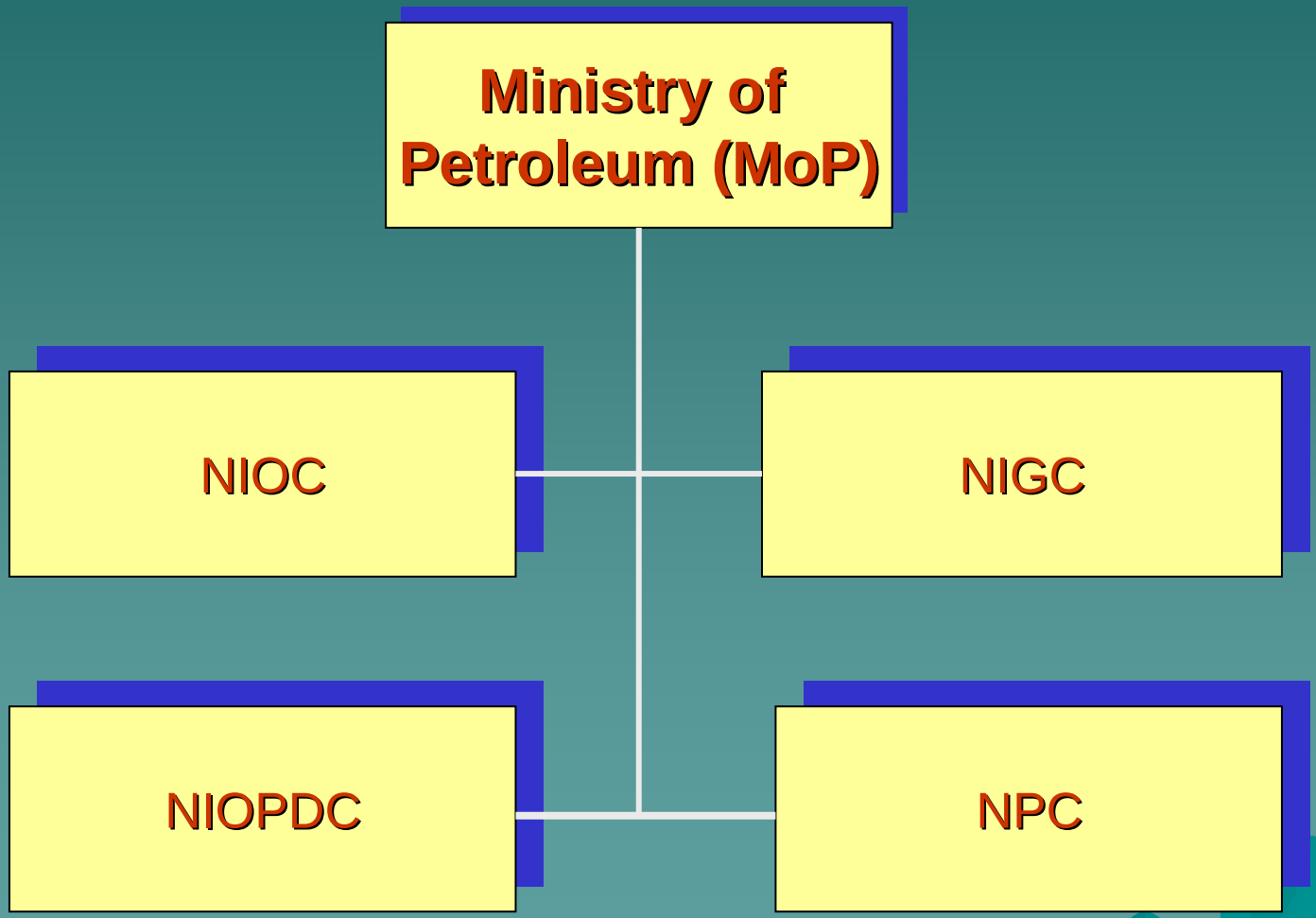
- Renewables: There are sample potentials of renewable energies in Iran. The annually average daily solar radiation is about 2,000 kW·h per m2. There are also good potentials of wind and geothermal energies in some parts of the country. However, because of the limitation of the existing technologies for steady and reliable supply of energy and much higher unit cost of electricity generated by these resources, it is not expected that renewable play a major role in Iran's electricity system in near future.

- HydroPower: The whole potentials of hydro power in Iran is estimated to be approximately 42,000 MW (e). According to the latest information released by Ministry of Power, the practical hydro potential of the country is projected to be only 23,000 MW (e).

Iran Energy Fact:

Due to a very cheap price of primary energy and the increase in population in Iran, the final energy consumption has increased more than 7% annually and electricity production has risen 10% per year in the last two decades. In other words, while the size of population is nearly doubled, the final energy consumption is quadrupled and electricity production is more than six folded to meet the existing demand. These figures show a very high level of consumption and an incremental trend of energy intensity in Iran.

Institutional Structure ; Key Players in Energy



NIGC Role

National Iranian Gas Company as one of the four principal Co.'s affiliated to oil ministry of Iran with 25 billions Rials. Initial capitals have established in 1965 AD. Presently NIGC has 26 Provincial Gas companies, 7 gas treating companies and 8 gas transmission regions.These companies are responsible for natural gas treating, transmission, distribution and consumption throughout the country. NIGC main activities are:

- Gas Treatment
- Gas Transmission
- Gas Distribution
- Research & Development
- Underground Storage
- Gas Trade (Export & Import)

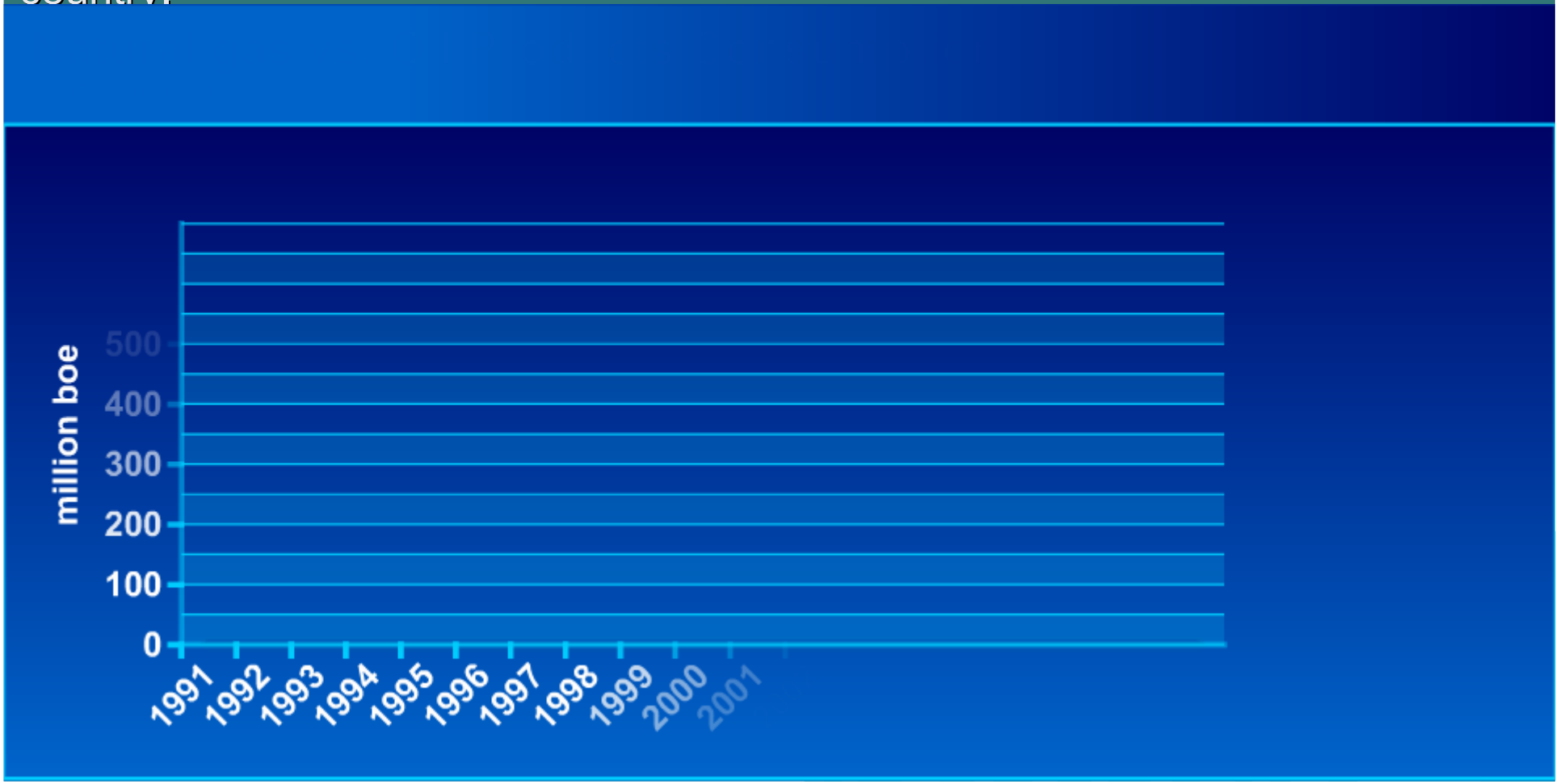
Iran's Natural Gas Facts & Outlooks

1. Main Supply Sources

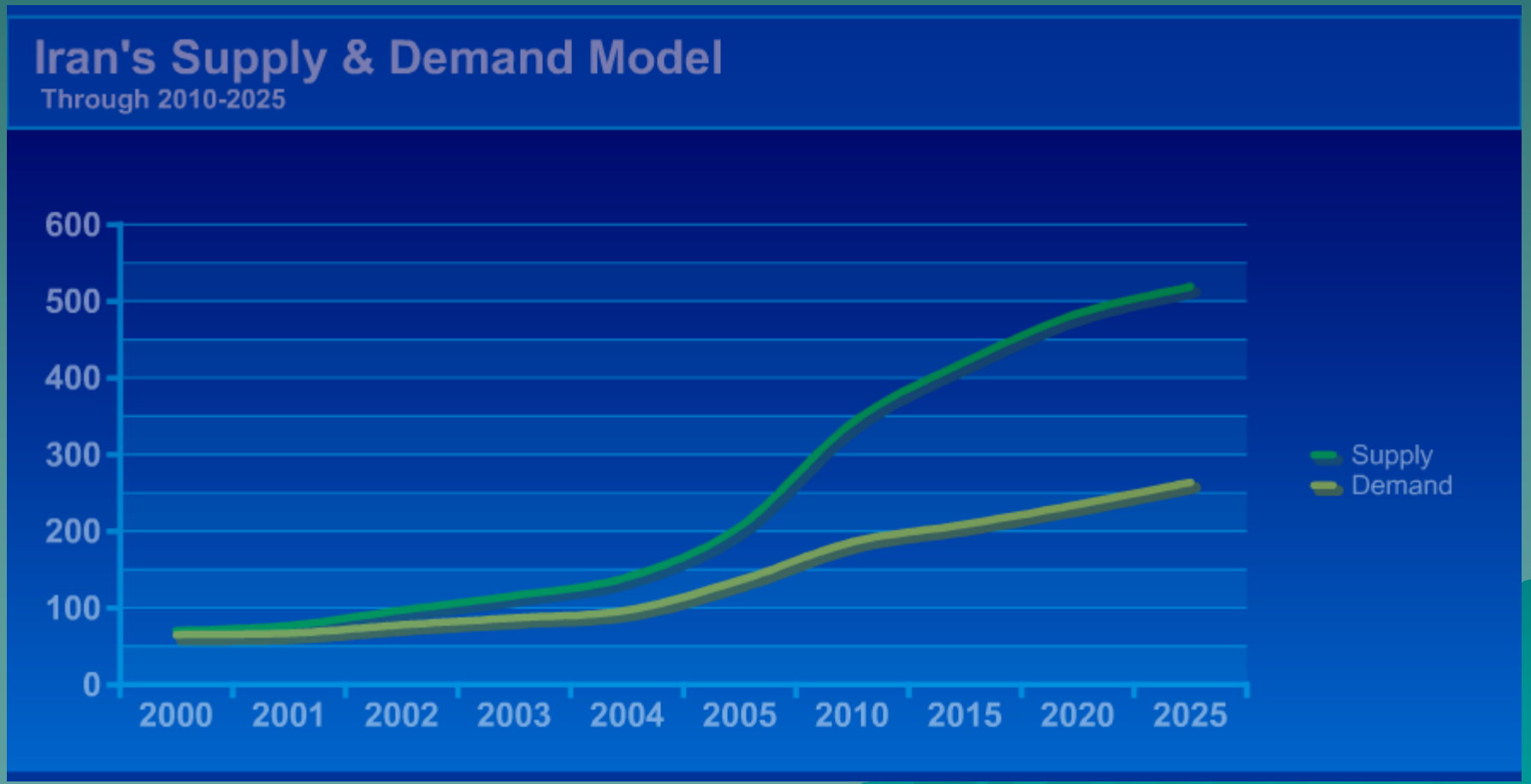
- **South Pars: 8-14 Tcm Persian Gulf basin**
- **North Pars: 1.42 Tcm Persian Gulf basin**
- **Kangan: 0.82 Tcm Persian Gulf basin**
- **Nar: 0.37 Tcm Persian Gulf basin**
- **Khangiran: 0.31 Tcm North-East basin**

2. Natural Gas Supply & Demands

country energy policy is based upon maximum allocation of natural gas resources and increasing gas share in basket of energy carriers through expansion of domestic gas networks and enhancement of Iran's disposition in gas exports to international markets, which would provide substantial savings in the consumption of crude oil and oil products to increase export incomes to the country.



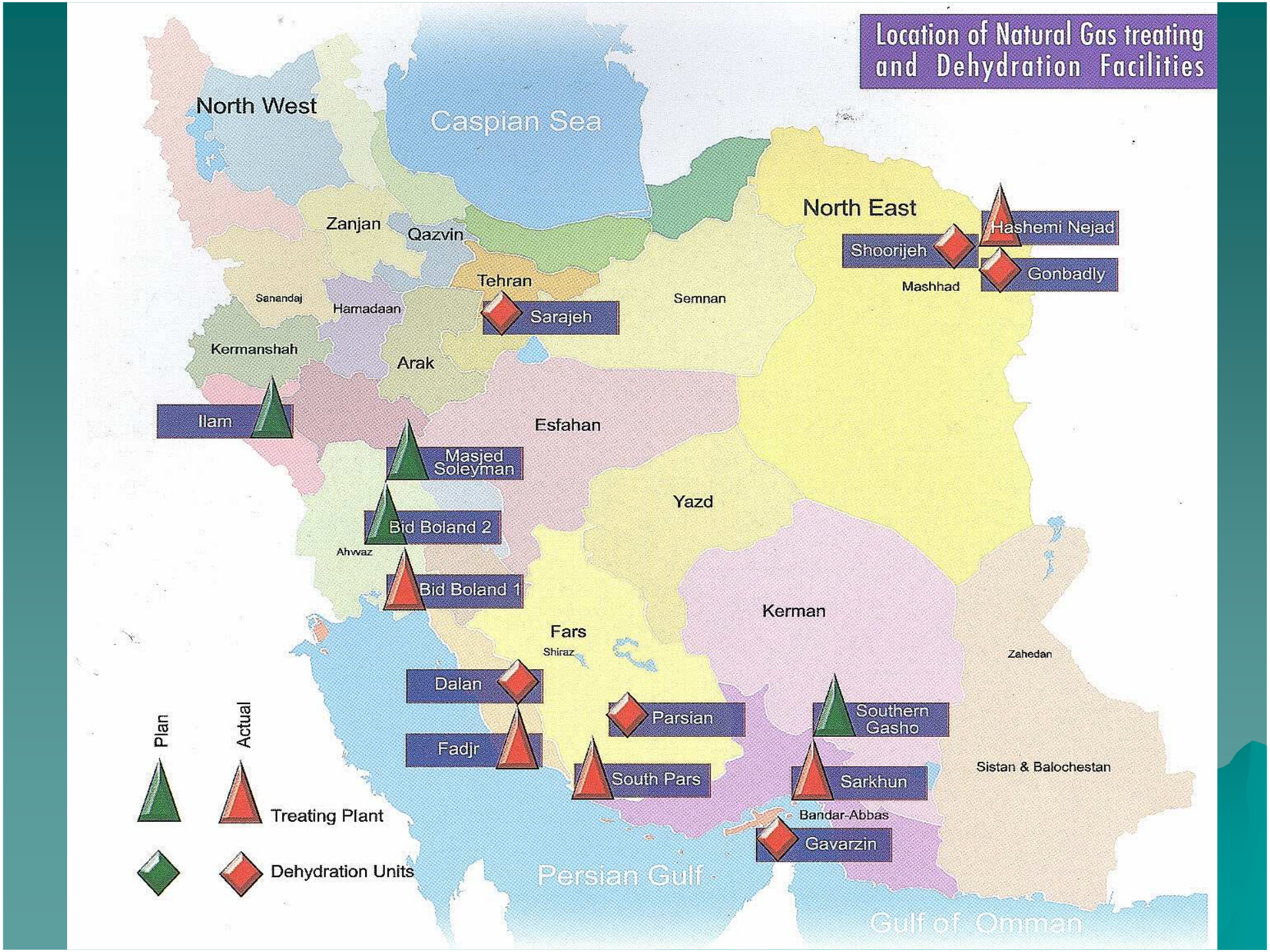
Based on Iran's supply-demand outlooks, Declining gas demand in some Iranian energy sectors through 2010-2025, will lead to a growing supply-demand gap, In fact Iran could has the competitive role in global natural gas markets .(255 bcm in 2025)



3. Natural Gas Treating

The country's gas treating capacity during years 1997-2005 indicates a substantial of 189.6 million cubic meters per day. The treating and dehydration capacity during this period with period with average annual growth of 14.3 percent

Plant / Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
FADJR	68	79.3	90.7	105	110	110	110	110	110	110
KHANGIRAN	24	26.4	27.5	27.5	27.5	44.5	44.5	44.5	44.5	44.5
BID OLAND	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
SARKHOON	7.1	7.1	7.1	7.1	7.1	7.1	14.4	14.4	14.4	14.4
DALAN	-	-	-	20	20	20	20	20	20	20
GAVARZIN	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
SOUTH PARS	-	-	-	-	-	-	50	75	125	125
PARSIAN	-	-	-	-	-	-	-	25	25	25
OTHERS	5.2	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
TOTAL	128.5	142.2	154.8	189.1	194.1	211.1	268	318.1	383	383


Location of Natural Gas treating and Dehydration Facilities
North West
Caspian Sea
North East
Zanjan
Qazvin
Tehran
Sanandaj
Hamadaan
Sarajeh
Semnan
Shoorijeh
Hashemi Nejad
Gonbadly
Mashhad
Kermanshah
Arak
Ilam
Esfahan
Masjed Soleyman
Yazd
Bid Boland 2
Ahwaz
Bid Boland 1
Kerman
Fars
Shiraz
Zahedan
Dalan
Parsian
Southern Gasho
Fadjr
South Pars
Sarkhun
Sistan & Balochestan
Bandar-Abbas
Gavarzin
Plan
Actual
Treating Plant
Dehydration Units
Persian Gulf
Gulf of Omman

4. Natural Gas Transmission

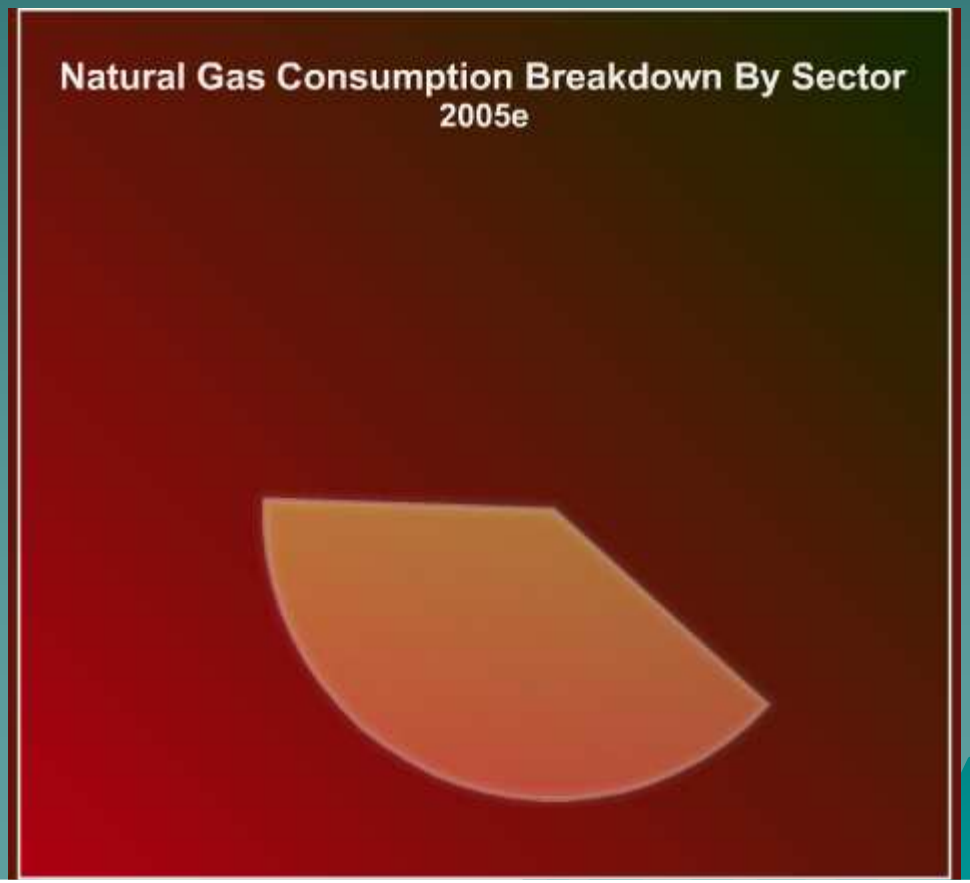
The activities of the National Iranian Gas Company in the frame work of high pressure natural gas pipelines indicates construction of approximately 7700 Kilometers of pipelines during years 1999-2004.The average yearly activity during years 1999-2004 has been 1283 Kilometers while at the end of year 2005 total length of transmission pipelines reached 21500 Kilometers .

Transmission Project	Specification	Investment (Forecast) Million $US
IGAT- IV	1052 Km Length 56 inch Dia.	230
IGAT- V	505 Km Length 56 inch Dia.	203
IGAT- VI	500 Km Length 56 inch Dia.	122
IGAT VII	860 Km Length 20 & 42 in Dia.	149
IGAT- VIII	1047 Km Length 56 inch Dia.	221
North & North East	790 Km Length 48 inch Dia.	150


Marganlar
Astara
Caspian Sea
Tabriz
Hashtrood
Rasht
Mianeh
Zanjan
Soltanieh
Qazvin
Neka
GhaleGigh
Farooj
Toos
Mashhad
Emamshahr
Tehran
Parchin
Sanandaj
Hamadan
Qom
Bakhtaran
Arak
eyzar
Dasht-e Kavir
(salt desert)
Kavir-e
Namak
Esfahan
Polkaleh
Yazd
Dasht-e
Lut
Dorahuon
Ahwaz
pataveh
BidBoland
Yasuj
Kerman
Shiraz
Zahedan
Sirjan
Farashband
HajiAbad
Abshirin
kANGAN
Asalooyeh
Bandar- Abas
Persian Gulf
Jask
Chah Bahar
Gulf of Oman
IGAT-I
IGAT-II
IGAT-III
IGAT-IV
IGAT-V
IGAT-VI
IGAT-VII
IGAT-VIII
NORTH-WEST
NORTH-EAST
WEST
RAY-SEMNAN
SARKHOON - KERMAN

5. Natural gas Consumption

To meet the fast growing domestic demand of natural gas (average 13% growth per year) by all sectors, NIGC has supplied 97.7 bcm at the end of 2004 and planned to satisfy 156.2 bcm in the end of year 2009. Currently, natural gas accounts for nearly 59% of Iran's total energy consumption, and the government plans billions of dollars worth of further investment in coming years to increase this share to 69% in the year 2009.



Number of cities using natural gas, Number of households' consumers and developing length of natural gas distribution networks shows the fastest growing in favor of country's industrial-economic development. Following table indicates tendency for optimum utilization of country advantages in the natural gas sector.

	2000	2001	2002	2003	2004	2005	2009 Est.
Gas Distribution Networks (1000Km)	59	69	79	87	105	115	125
Gas Consumers Households (Million-No)	6.6	7.4	8.4	9.1	10.5	11.3	12
Cities Using Natural Gas (No)	379	392	445	480	515	548	690

6. Natural Gas Trade

Export : With its enormous natural gas reserves, Iran is looking to export large volumes of gas. Besides Turkey , potential customers for Iranian gas exports include: Ukraine, Europe, India, Pakistan, Armenia, Azerbaijan, Georgia (interested in receiving Iranian gas via Armenia), Taiwan, South Korea, and even China. Exports could be via pipeline and/or LNG tanker, with possible LNG export terminals at Asaluyeh or Kish Island. As of February 2005, BG and NIOC reportedly remained interested in developing a $2.2 billion LNG plant at Bandar Tombak on the Persian Gulf coast. The plant is to comprise two LNG trains, with capacity of at least 4 million tons per year each, and with possible completion in 2008.

Import : Aside from natural gas exports, Iran also has discussed importing natural gas from Azerbaijan (a swap deal is set to kick in by the end of 2005), and already imports some natural gas from Turkmenistan. This natural gas is for use in Iran's northern areas, far from the country's main natural gas reserves in the south.

Iran’s Natural gas Industry SWOT Analysis

Strengths :

- Islamic Republic of Iran as a major state in Persian Gulf has the world's second largest natural gas reserves (around 15.3%, after Russia)
- Iran is strategically and geopolitically located in Middle East between the Persian Gulf and Caspian Sea, in fact Iran is a bridge between important natural gas resources and major gas markets in Europe. In other hand the country is the best location for access to world market through Persian Gulf by LNG.
- Iran is owner of the largest natural gas resources which are cost effective for production.
- Low cost expert manpower who have more experience in oil & gas fields.
- Despite the fact that domestic natural gas demand is growing rapidly, Iran has the potential to become a significant natural gas supplier (exporter) due to key development projects.

Weakness:

- Non-competitive, sate-controlled environment governs in Iranian natural gas industries.
- Political conditions govern on major Iran's economics management and decision makings.
- Non-competitive organizational structure in oil & gas up-stream sectors.
- Privatization trend is very slow.
- Lack of enough attention to new technologies in natural gas production sectors.
- Lack of enough attention to world gas trades.
- The largest country's gas source (Sought Pars) is common with Qatar.
- Iran's economy relies heavily on oil export revenues - around 80-90 percent of total export earnings and 40-50 percent of the government budget.
- Large-scale state subsidies on foodstuffs, gasoline, etc
- Inflation is running at around 15 percent per year
- The price of natural gas to consumers is state-controlled at extremely low prices, encouraging rapid consumption growth.

Opportunities:

✓Fast growing of global gas markets.
✓Geopolitical location of Iran among far east, Europe, Africa, Russia and central Asia
✓The major role of Iran in the most important gas sources of world
✓New markets in eastern Asia (China, India …) and close to Iran.
✓ Existing of new competitive trade and industrialized condition in world.

Threats:

❖Sanction. In March 2004, USA extended sanctions originally imposed in 1995.
❖Industrialized countries which hold new innovation technologies of gas industries.
❖International Financial limitations for investment.
❖Changing international political/economical structure.
❖Entering new players in investment on natural gas international projects.

Thank you

for attention