



Iran's Energy Equation

Bijan Khajepour
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Contents

- Review facts and figures about Iran's hydrocarbon sector;
- Overview of the Oil and Gas sector issues and policies;
- Overview of Iran's mindsets to analyze the impact of the political development on future opportunities;



Facts and Figures

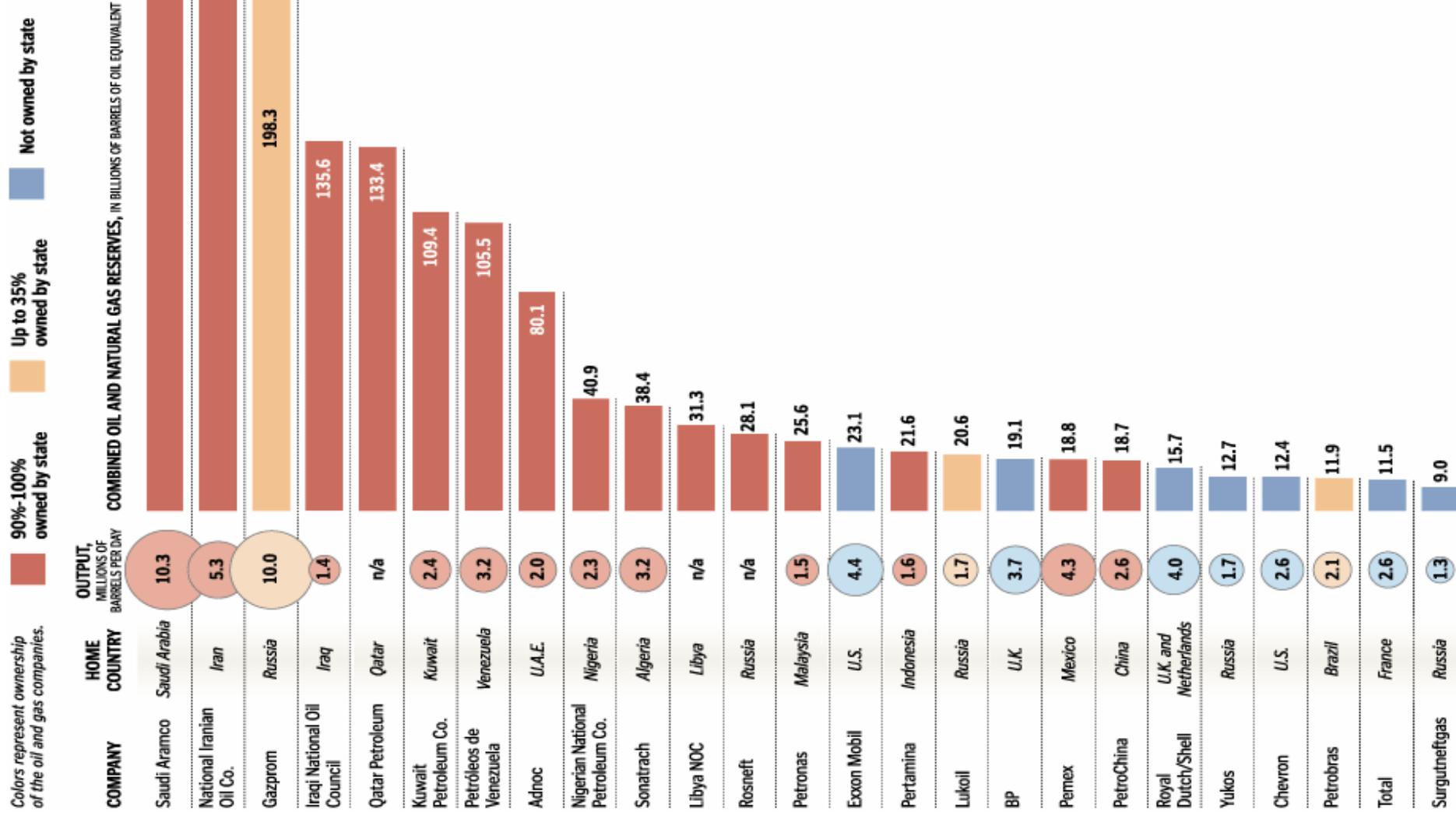


Iran's Oil and Gas Figures

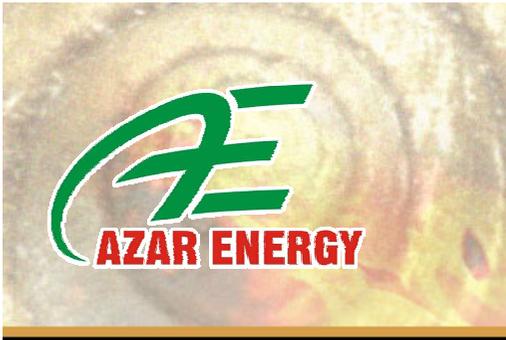
SOURCE	DATE	OIL RESERVES Billion Barrels	GAS RESERVES TCF
NIOC	2004	133.5	
BP	2003	130.70	942.20
Oil & Gas Journal	2005	125.80	940.00
OPEC	2003	133.25	974.32

By any account, Iran has the second largest reserves in both oil (after Saudi Arabia) and gas (after Russia)

Top 25 Hydrocarbon Reserve Holders in the World



Figures are for 2003, the latest year available.



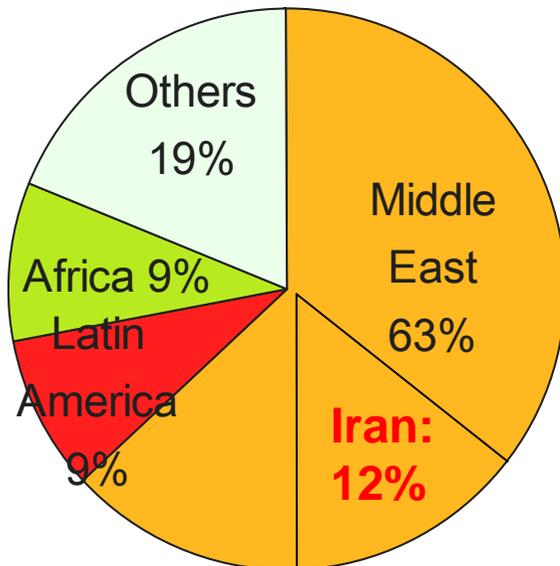


Iran and “Greater Asia”

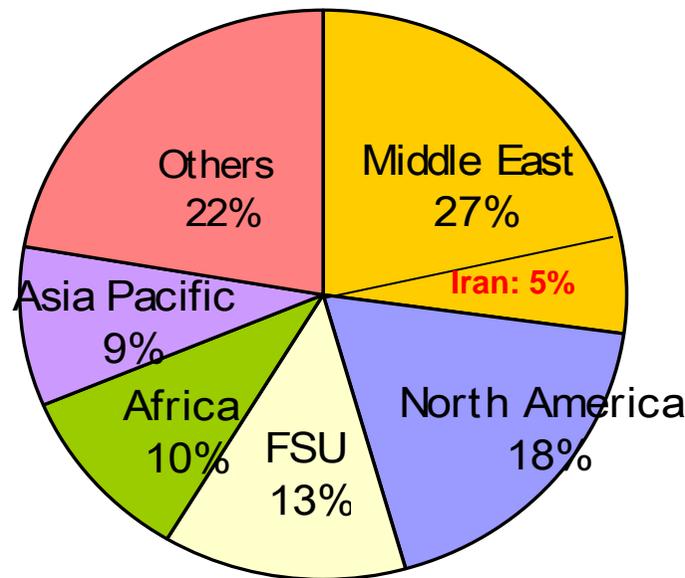
Iran is a significant member of the emerging “Greater Asia” which represents the community of ME producers and Asian consumers.

Milestones of the Cooperation between the Middle East and Asia towards “Greater Asia”:

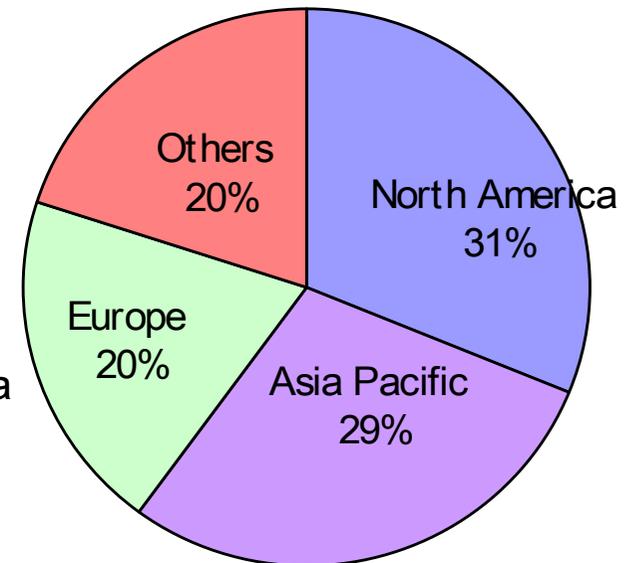
- February 2000 : Middle East is part of Asia (Saudi Oil Minister’s statement)
- September 2002 : The IEF and OPEC Ministerial Meetings in Osaka, Japan
- January 2005 : The 1st Asian-version IEF Meeting in New Delhi, India
- Bilateral developments: Iran-China Agreement (October 2004) and Iran-India Agreement (January 2005)



Reserves (1.15tri. barrels)



Production (83m b/ d)



Consumption (82.5m b/ d)



The Oil and Gas Sector



Basic Energy Statistics of Iran

(Figures in million barrels of oil per day equivalent)

- **Iran's total Energy Production ~ 5.6 mb/d**
- **Total energy Consumption ~ 2.8 mb/d**
- **Oil Export ~ 2.7 mb/d**

- **Oil Reserves 90 Billion Barrels**
Potential to Produce 5mb/d of Oil for~ 50 years
- **Gas Reserves 27 Trillion Cubic Meters**
Potential to Produce 500bcm/y of Gas for~ 55 Years
- **Potential to Produce 50 mt/y of Petrochemicals**



Summary of Energy Sector Projects until 2020 (Billion Dollars)

- Iran has very ambitious plans in oil, gas and petrochemicals;
- Though the strategy on oil production capacity increase remains a key debate topic, major investments in this sector are inevitable;
- Iran will try to increase oil production capacity, but this effort is hampered by depletion;
- The legal framework remains an issue, though slow changes are taking shape;
- Iran's focus in the next decade will be on gas and also gas-intensive industries;
- Power generation will be an important element of the gas-intensive industries, especially as it has feasible export potential;

Investments needed in Iran's energy sector 2005-2020

Sector	Investment Volume (in \$ billion)
Oil	40
Gas	45
Petrochemicals	25
Power Generation (from gas)	30



Iran's Objectives in Contracts with IOCs

- Develop Iranian resources, with a special attention to gas as the underdeveloped resource in Iran and on shared oil resources;
- Achieving foreign investment despite legal and Constitutional limitations;
- Transfer of **technology**;
- Tie the IOCs to the Iranian market through the 25 year Exploration and Development contracts;
- Full control and close supervision of NIOC on the schedule and costs;
- **Lower costs** compared to other contracts commonly used in oil industries;
- **Maximum use of domestic engineering, technical and executive capabilities** in order to promote the quality of domestic sources and prevent the outflow of foreign currency.



Planned Scenarios for Oil and Gas Production

<i>Year</i>	<i>Capacity requirement to maintain OPEC share</i>	<i>Planned Capacity for gas production (in bcm)</i>
2006 (end)	4.5 million bbl/d	180 bcm/d
2010	5.4 million bbl/d	230 bcm/d
2015	6.7 million bbl/d	320 bcm/d
2020	8.0 million bbl/d	400 bcm/d



Potential Energy Sector Policies

- Continuation of oil and gas upstream projects focusing on Iranian companies as the prime contract awardees and insisting on more capacity building in Iranian companies;
- Moves towards decentralization through empowering provincial authorities to develop projects under the supervision of NIOC/NIGC etc;
- Greater emphasis on gas-intensive industries with higher job creation potential;
- Shift to pipeline construction as a main means of gas exports due to the impact of pipeline construction on regional development in the country;
- Expanding the country's gas pipeline network to maximize the use of gas for domestic consumption;



Gas Export Routes from IRAN

Prepared by:
Atieh Bahar Consulting





Accumulated Gas Utilization (2005-2030)

(Figures in Trillion Cubic Meters)

- Domestic Consumption 6 TCM
- Gas Injection 2 TCM
- Gas Based Industry 1 TCM
- Export (Pipeline & LNG) 2 TCM
- **TOTAL 11 TCM**
- This is approximately 40% of the total present estimate of reserves
- However, Iran would like to maintain the capacity to be a strategic exporter of oil and gas;
- This is where the significance of nuclear technology enters the picture:
 - Iranian politicians argue that nuclear technology is significant in maintaining Iran's strategic export capability;



The Electricity Balance

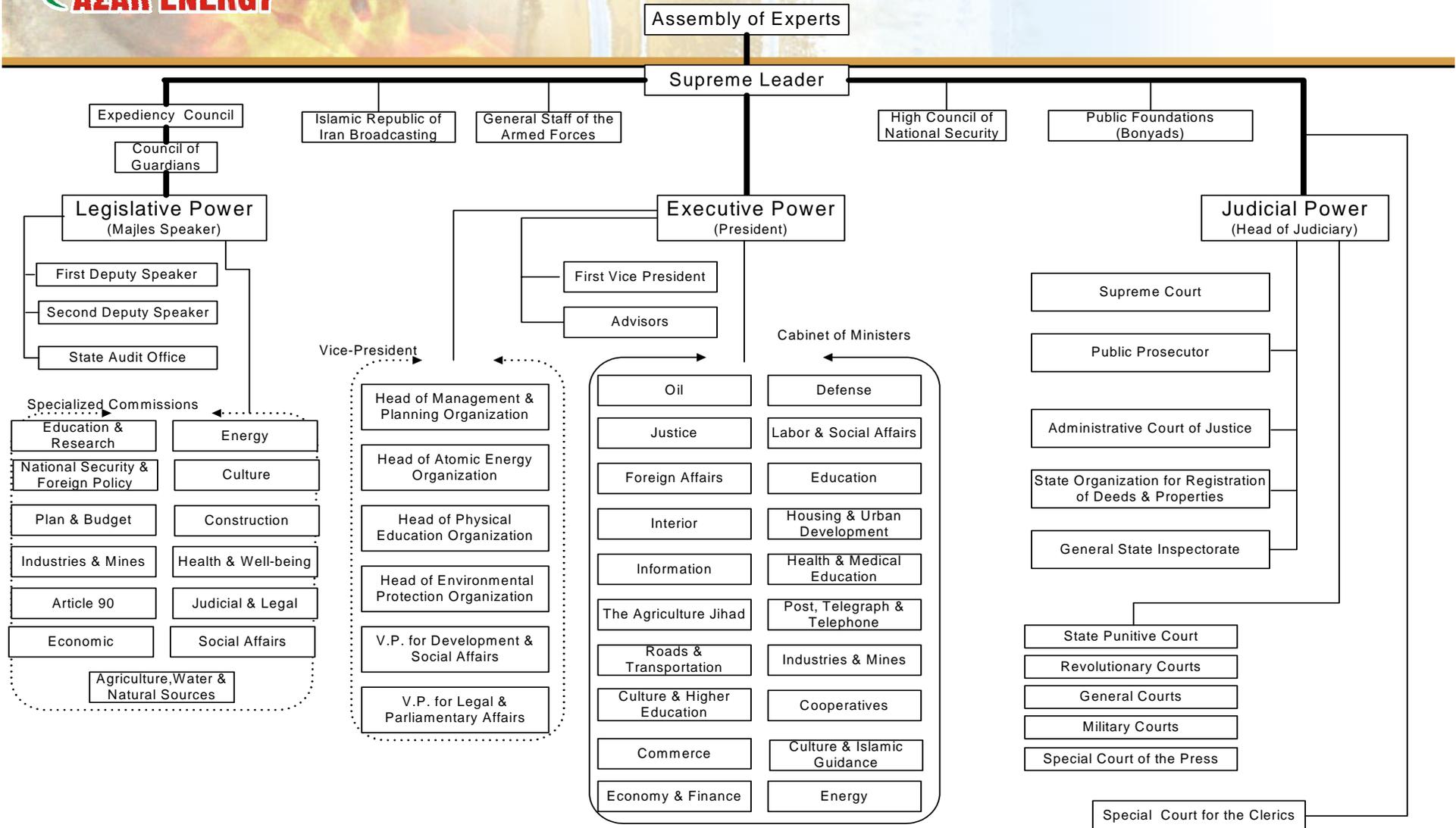
Current production Thermal = 93% / Hydro and others = 7%	156.4 TWh
Current consumption	130.0 TWh
Projected annual consumption in 2025 based on population and consumption figures:	280.0 TWh
Planned nuclear capacity in the next 20 years	20 TWh
Needed investments for gas power generation by 2025	\$30 billion
Needed investments for nuclear power generation by 2025	\$20 billion



Iran's Political Structure



Iran's Power Structure





Characteristics of Iran's Power Structure

- A combination of parallel Islamic and Republican institutions;
- Significance of informal and personal relations as opposed to formal institutional relations;
- Significance of councils in which decisions are made based on a consensus-building model
- Tendency to politicization of non-political power centers
- Gradual attention to the Constitution is overshadowed by legal and constitutional ambiguities



Common Vision of the Power Centers

- With all these conflicting power centers in Iran, we need to identify “the common vision” which is provided in the “20-Year Perspective” Document.
- This document was:
 - Developed by the Expediency Council after months of deliberation
 - Signed off by the Supreme Leader
 - Becoming increasingly prominent (recent EC decree)
- Essentially, Iran strives to be the regional technological and economic powerhouse over the next two decades;
- It envisages a Knowledge-based society in Iran. Therefore, all issues relating to the generation or transfer of knowledge to Iran as well as to job creation will be welcomed by all the above mindsets.
- Focus of foreign companies should be:
 - Investments
 - Transfer of technology and knowledge.



Conclusions

- For the first time since the 79 revolution, Iran is focusing on becoming an “economic and technological power”;
- The 20-Year Perspectives produced by the top leadership concentrate on “welfare”, “wealth creation”, “agricultural and industrial growth” and “a software movement”;
- Iran will be a major producer and consumer of oil, gas and petrochemical products by 2020. The development of energy resources will provide ample opportunities for international companies;
- Iran wants to maintain its strategic capacity to be an important player in the international oil and gas market as well as its strategic position as an exporter of electricity in the region;
- The value of energy projects in the coming fifteen years is estimated to be between **\$130-160** billion dollars. The hard currency requirements for these projects is close to **\$80** billion dollars;
- Economic and technological cooperation will become key parameters in Iran’s international relations;