are examples where the specific technology has been developed successfully to the pilot plant stage; or simulated with computer models based on physical and chemical properties that have been measured in the laboratory (on core samples, say, in studying the behaviour of an oil reservoir). The scale-up parameters to the commercial size, or application to a specific reservoir, may not be known - they can only be inferred from other processes with some similarities.

Resolving the problem of increasing the productive capacity and overall recovery of oil from the large, fractured limestone oil reservoirs of Iran through the injection of gas is not a new idea. The limestone reservoirs of Iran are unique in the oil industry because of their size, the high flow capacity of the fractures, and the physical nature of the matrix of the limestone rock. Identifying the in situ physical description of the rock is difficult because the sampling process itself may induce changes - for example, in the level of oil, gas and water saturation in the rock; the wettability characteristics of the rock; and the overall matrix permeability.

Many models of the reservoir behaviour have been constructed - but these all involve many assumptions on the parameters in the flow equations that govern the behaviour of the models. The long time-scales for the response of a reservoir to a controlled gas injection programme means that no significant field evidence is available so far to define more precisely the set of parameters that characterise a particular reservoir. There will continue to be considerable uncertainty about the detailed long-term effects of gas injection, although there is a general consensus that raising the reservoir pressure will be beneficial. The true quantitative effects may not be known for at least the next decade.

5.3 Issues & Opportunities for Gas Exports

Up to year 2000 the export of gas had been neither a great success in volume terms nor an economic success in terms of income to Iran. Only one project of any significance has so far been operational for any length of time - gas in IGAT 1 from the Nar/Kangan fields to Azerbaijan in the (Former) Soviet Union. Payment delays and disputes over the pricing of gas led to a decline in volumes from the 1977 peak of about 8 bcm/ year to its cessation in 1979. The combination of the Iranian revolution and the war with Iraq precluded any prospects for a resumption of exports or new contracts with Europe or elsewhere until th year 2000.

A 40-inch pipeline to Turkey via Bazargan has recently been opened at a rate of about 4 bcm/year and scheduled to rise to 10 bcm/year. This contract is supported by gas from the Nar/Kangan fields via IGAT 1 and IGAT 2, the main suppliers of gas to the northern Iranian markets. Additional gas into the northern region, an area of high demand, is also supplied from Turkmenistan, 2.65 bcm per year in 2000.

The level of exports to Turkey is expected to increase to about 10 bcm per year - and more if the pipeline capacity is increased. However, the pace with which Turkey has entered into contracts for gas imports for the next five to ten years suggests that some pruning of their commitments will be necessary over the next year or two. The prospects for any significant increase for Iran in its exports to Turkey, therefore, do not look good at the present time.

This seems to be a repeat of the pattern in mainland Europe - adequate supplies for the next ten years (and more, if required!) as pipeline gas from Norway, Netherlands, Russia & the Central Asian Republics, and Algeria; and as LNG from Nigeria, Egypt, Algeria, and Trinidad. Competition for business will be fierce, a problem that Iran will face should it seek to export gas to Europe either as pipeline gas or as LNG.

Looking to the east rather than the west offers better prospects. The potential markets in South Asia - especially Pakistan and India - are enormous; China is too. As industrialisation proceeds and standards of living improve the demand for a clean fuel like gas will grow. A note of caution, however, following the problems of Enron in India - where the high costs of electricity generated from gas were unacceptable to the State Electricity Company on the grounds that the local people could not afford to pay for the power they consumed. This is a "catch 22" situation - for without the access to adequate electric power the economy will not grow, and the people will still not be able to afford it!

The competition for these eastern markets will still be fierce, but not quite as severe as in Europe where prices are somewhat lower than in South & East Asia. There will be another hurdle facing Iran if it seeks to join the suppliers of LNG to China or Japan, or other countries in the east - this is its credibility as a reliable supplier of gas in the long term, say 20 - 30 years. The competitors, from Australia, Indonesia, Malaysia, Qatar, Abu Dhabi, and Oman already have contracts operating in the east, some for more than 10-15 years. ■

additional capacity in IGAT 3 & 4. The key determining factor will probably be the value of Turkmenistan's gas at the Iranian border.

Iran should discourage the concept of granting transit rights to the southern coast of Iran for gas originating to the north of the country. Such gas would be in direct competition in the overseas markets with Iran's own resources, if Iran should opt for LNG or pipeline exports. If a real opportunity for gas exports from the southern shores of Iran exists, then Iran's gas should be more attractive economically (cheaper at the point of use) because of the absence of any pipeline costs from the far north, beyond Iran's northern border.

5. IDENTIFYING THE RISKS & UNCERTAINTIES IN GAS DEVELOPMENT PROJECTS

It is apparent from the facts set out above that gas is an extremely important, if not the most important, factor in assigning the priorities for the hydrocarbon industry in its development over the next decade. If the major developments in the gas industry are successful, gas should provide a key driving force for the Iranian economy, providing a sound basis for that economy to grow. In particular, the continuing replacement of oil usage by gas in the indigenous energy economy, the improvement in both productive capacity and overall recovery of oil from the principal oil reservoirs should provide a significant boost to foreign exchange revenues. The opportunity to export gas, once the threshold for internal requirements has been met, should provide a sound basis for establishing Iran's position as a major gas supplier to the world's energy consumers.

There are many risks and uncertainties to be faced, however, that could upset this simple approach when agreeing the fine detail of future actions, particularly the allocation of investment capital. There are almost always more demands for capital, and more projects that their champions lobby for, than a country or company can afford. Priorities must be assigned and decisions agreed - but recognition of the impact of these uncertainties must be acknowledged.

The current demand of the gas sector is satisfied principally by gas supplied from the Kangan and Nar gas reservoirs some 200 Km. Southeast of Bushehr

the first priority for Iran is to develop its gas reserves for use internally - to meet indigenous energy demands as well as boosting the recovery efficiency of the oil reservoirs

Risk assessments of large-scale projects are very complex and greatly dependent on the details specific to the individual project. This paper is not the right place to provide such details, but it would be useful to highlight some areas of uncertainty and risk in the major projects in which Iran may be involved in the hydrocarbon industry.

5.1 - Re-vitalising the Overall Economy

This is a key target for many decision-makers as they see the continuing growth in population and the unacceptably high level of unemployment. Raw materials, mostly hydrocarbon fuels and minerals, are the main commodities exported and will be the basis for economic growth in the short to medium term. However, the demands for oil and gas, and some minerals, are functions of global economic growth, which is outside the control of Iran.

Thus, the policy of seeking to improve oil recovery and productive capacity in the major oil reservoirs is consistent with the overall economic target. Factors outside Iranian control, however, may delay or accelerate the process even when the chosen policy is successful.

5.2 - The problems of New and/or Unproven Technology

In many areas of technology there

pipelines, IGAT 1, running from Ahwaz to Qom and on to Rasht where it meets up with the east-west line from Turkmenistan; and IGAT 2 from the Kangan and Nar gas fields to Tehran and Rasht. A connection to the west from Rasht to Tabriz allows limited quantities of gas to be delivered to Turkey to meet obligations under a Sale & Purchase contract rising to about 10 bcm by the year 2007.

The typical 56-inch pipeline has a capacity of about 30 bcm per year if adequate compression is installed as in IGAT 2. The incremental transmission pipelines required to move the gas from the South Pars developments to meet internal demand and oil field injection schemes (of about 100 bcm per year) would therefore be three major, 56-inch lines at the minimum. Any thoughts of export projects by pipelines would, of course, require additional, dedicated pipelines.

Two of these pipelines would need to be integrated into the internal gas transmission and distribution system, with a third direct line to the oil fields area. The first of these pipelines - IGAT 3 - with a design capacity of 30 bcm per year is already under construction and scheduled to take gas from the first three phases of the South Pars developments. It will carry gas to Esfahan via some smaller cities after delivery to the mainland at Assaluyeh.

A second new pipeline - IGAT 4 - is the subject of a feasibility study. This is planned to meet up with IGAT 1 & IGAT 2 at the spur-line junction for Esfahan.

Any delays in completion of these pipelines will cause costly delays in delivering gas to the domestic market.

4. THE REGIONAL ROLE FOR IRAN IN THE ENERGY SECTOR

Thoughts have often been expressed about the potential for Iran becoming a major player in facilitating the exploitation of the oil and gas assets of the Central Asian Republics. Iran sits at the southern periphery of the Central Asian Region offering direct access to the Persian Gulf, the Arabian Sea and the Indian Ocean, and thence by sea transport to the markets of East Asia and the Indian sub-continent. In addition, its border with Pakistan offers land-based access to Southern Asia where energy resources are scarce in relation to the ever-growing population's needs. The current outlook and issues for collaboration on oil are somewhat different from those on gas, and will therefore be discussed separately in the following paragraphs.

The need to provide facilities for the export of oil from newly discovered reserves in Azerbaijan, Kazakhstan, and Turkmenistan has led to a number of alternatives being considered. The selected routes - covering both short-term and medium-term requirements - were focussed on exits to the west that gave early access to Black Sea ports and sea transportation routes to markets in Europe and the Americas. A number of considerations ruled Iran out of consideration at the time these decisions were taken - principally arising from the unsettled political situation. This was reflected in the differing approaches among the decision-makers to the stimulation of the flagging economy that seemed irreconcilable at the time. In particular, the internal debate on foreign investments in the oil and gas industry was germane to the decision of the oil producers of the Central Asian Republics to go west rather than south.

For Iran this may have been a good decision. The programme for the improvement of performance of the Iranian oil fields is very capital intensive, and very demanding on the engineering and technical skills that may not be easily available internally. The success of the gas injection programme to achieve this up-grading of the oil reservoir performance is key to raising the level of economic activity - since oil exports remain a dominant factor in Iran's hard currency earnings, accounting for about 75% in year 2001. Any action that prejudices the achievement of this programme should be avoided. The diversion of capital and/or skilled manpower to projects that are for the benefit of a Third Party's business - and particularly a competitor to Iran in world oil markets - comes within this category of actions to be discouraged.

In the case of gas the considerations could be somewhat different, for the first priority for Iran is to develop its gas reserves for use internally - to meet indigenous energy demands as well as boosting the recovery efficiency of the oil reservoirs and the increase in oil productivity mentioned above. There may be opportunities arising from time to time for developing some indigenous gas for export, if the proposed share of production available from the twelve phases of the South Pars development are greater than the local market and pressure maintenance programme demands.

At the same time, some of the Central Asian Republics may see advantages for their own gas exporting ambitions in gaining access to the international waters of the Arabian Sea for their gas. This would give them a useful economic advantage over pipeline exports to the West in competition with the dominant, established gas exporter in the region - Gazprom - that essentially controls the east to west pipeline flow systems. As internal demand and sales to Turkey build up in northern Iran, there could be economic advantages in increasing the quantities of gas flowing into Northern Iran from Turkmenistan to satisfy these demands. They could defer the timing of new,

Table 5 - Development of the South Pars Field
Availability of New Gas

Date Available	Phase	New Gas Available
End-2002	Phases 1, 2, &3	30 bcm/year
	plus	
End 2005	Phases 4 & 5 (part)	10 bcm/year
	plus	
End 2006	Phases 4 & 5 (total)	20 bcm/year
	plus	
End 2006	Phases 6, 7 & 8	30 bcm/year
	plus	
End 2008/9	Phases 9 & 10	20 bcm/year
	TOTAL post-2006	**100 bcm/year**
Not known	*Phases 11 & 12*	*(Export?)*

Source - CERA

A preliminary "allocation" of gas from this development suggests that it will be:

Domestic Market (Iran only)	60 bcm
Export to Turkey via existing contract	10 bcm
Injection into key oil fields	30 bcm
Total	**100 bcm/year**
Other Exports (e.g. LNG, pipeline gas)	20 bcm/year

Table 6 - Incremental Gas supply Requirements To Meet Scenario Gas Demands (Bcm/year)

Year	2005	2010	2015
High Scenario	23.5	46.1	73.2
Low Scenario	15.2	26.1	35.7

The key conclusions to be drawn from this simple analysis, on the basis of the above assumptions, are:

* The full 60 bcm/year capacity from South Pars, provisionally allocated to meet the domestic gas demand in Iran, will not be needed until about years 2012/2013 in the High Scenario, and well beyond 2015 in the Low Scenario;

* If the target date for completion of Phases 1 to 10 were met, then the surplus capacity over and above the growth in gas demand by, say, 2007/8 would be far in excess of the incremental gas demand in both scenarios;

* If the target date for completion of Phases 1 to 10 were to slip back to 2010/11 or later then the surplus capacity of the South Pars development would be less.

The above suggests that flexibility should be built into the agreements with the developers of the South Pars field to reflect the possibility that slippage in project completion and uncertainties in the gas demand projections could necessitate an on-going review of progress on the overall development.

Two other factors need to be taken into account - firstly, the existence of additional gas that lies in more accessible and convenient fields for the market, and has more favourable economics than South Pars. Secondly, the potential to accelerate the injection of gas into the key oil fields requiring pressure maintenance, by harnessing the surplus gas from the South Pars development. This would need to be built into the planning of the South Pars development as the provision of funds and the logistics of developing the infrastructure for the associated pipelines, wells and compression facilities should be closely co-ordinated with the gas production project.

The recent data on gas injection into the oil fields indicates that 1999/2000 levels of gas injection were in the range 30-35 bcm per year. The output from Phases 6, 7 & 8 of South Pars will yield another 30 bcm per year. Is the total injection of 60-65 bcm per year adequate to give the improved productivity of the oil fields? This issue will be considered later in Section 4 of this paper.

3.3 - Meeting the Demand for Gas: The Pipeline Infrastructure

The target of an additional 100 bcm per year of gas production from the South Pars offshore field by the latter years of this decade will require a large increase in the pipeline capacity to move that gas to the areas of potential consumption. The general direction of flow will be northwards to meet the growing demands of the industrial areas of Tehran and northern Iran, and the proposed large-scale injection of gas into the oil fields for re-pressuring.

The existing national transmission system consists of two principal

Energy consumption in Iran has grown from 69.1 million tonnes oil equivalent, mtoe, in 1990 to 115 mtoe in 2000 - an average annual growth rate of just over 5%.

3.2 - Meeting the Demand for Gas: The Supply Options

The current demand of the gas sector is satisfied principally by gas supplied from the Kangan and Nar gas reservoirs some 200 Km. Southeast of Bushehr. The growth in demand under both scenarios will require additional resources to be developed and these will almost certainly be provided from the South Pars field development.

The published plans for additional gas to meet the gas sector demand plus a rapid expansion of gas injection into the oil reservoirs, are concentrated on the development of the South Pars field, an extension of the North Field in Qatar. This field is one of the largest in the world with reserves in the range 6 - 10 trillion cubic meters (200 - 350 trillion cubic feet) and the long-term plans for development are in keeping with that scale of resource. The success of Qatar in developing and marketing its share of this giant field - the North field - has helped to focus Iran's efforts on achieving some balance between the two halves of the field to reduce the problems of "cross-border" drainage should the Iranian production be deferred too long.

The outline development programme for South Pars is divided into twelve Phases, each aiming to develop a productive capacity of 1 billion cubic feet per day (bcfd) or 10 bcm per year. The initial programme is aimed at completing the first twelve Phases within the next 5-7 years through the use of foreign and Iranian companies or groups of companies to develop the upstream facilities and deliver the gas to shore for onward transmission.

Iran has yet to establish itself as an international gas player that would complement its role in the global oil business - for reasons of policy and politics

Improved economic performance of the total Iranian economy is almost certain to lead to increased consumption of energy

The policy of replacing oil consumption by natural gas for internal use has strong economic support

The programme was initiated in 1997 with the award of contracts covering Phases 1, 2, and 3. Phases 4-8 were signed in 2000, but some delayshave been encountered, with finance and other problems. However, Phase 2 & 3 should be on stream in the first half of this year and Phase 1 by the end of 2002.

Some of these Phases have very specific target applications, some of which have longer lead times than the early ones. For example, Phases 1, 2, and 3 are destined for the internal Iranian market, while Phases 4 & 5 are scheduled partly for internal markets and partly for supplying Turkey under a contract signed a few years ago. Phases 6,7 and 8 are identified as key projects for supplying gas for reinjection into three key oil reservoirs requiring pressure maintenance - Agha Jari, Ahwaz and Mansouri.

Finally, Phases 9 - 12 have yet to complete negotiations on the development contract. Phases 9 & 10 are currently destined for the domestic market, and Phases 11 & 12 for export, pending an evaluation of the feasibility of gas exports as LNG or pipeline gas. From this programme it is clear that Iran has a huge quantity of gas potentially coming on stream over the next six or seven years. Making allowance for the possible delays and constraints in negotiating and operating these agreements, a realistic expectation of gas volumes available from the South Pars field might be: (see tables 5 & 6 in the next page)

Assuming that the current production from the Kangan, Nar and other gas supply sources can be maintained for the next 10 years, say, then the quantities of South Pars gas required to meet the domestic gas demand in the High and Low Scenarios are:

sector is likely to continue its rapid rise - 7 to 8% per year as a result of population and economic growth. By comparison with other developing countries this would be consistent with economic growth in the range 4-6% per year.

CERA has developed two scenarios to assess the future sector demand for gas (excluding for the moment re-injected gas into the oil reservoirs) based on assumptions of annual economic growth:

*** A High Growth Scenario - to achieve a high economic growth rate of at least 4% per year.** In this scenario successful economic reforms in Iran are put in place, and a high capital investment rate is maintained in all sectors consistent with achieving a sustainable growth rate >4% per year on average in the economy over the period 2000-2015. CERA believes that this could lead to a gas sector demand rising from ca.60 bcm per year today to 130 bcm in 2015 - equivalent to an average annual growth of 5% over the period to 2015. This is considerably lower than the growth rate of about 10% per year in the 1990s - but the future projection has a much higher starting point.

*** A Low Growth Scenario - to achieve a lower economic growth rate of at least 2.5% per year.** In this scenario successful economic reforms may take longer to achieve in Iran. As a consequence, the investment rate has a slower build-up and the benefits to the country are also delayed. The demand for gas increases, but at a slower rate, rising from about 60 bcm per year in 2000 to 95 bcm in 2015 - an average annual growth rate of 3% over the period to 2015.

Table 3 - Future Gas Sector Demand - High Scenario
(Bcm per year)

Year	2000	2005	2010	2015
Residential/Commercial	17.6	21.2	25.8	31.4
Industry	15.6	22.0	28.6	36.3
Power Generation	22.6	35.0	44.9	55.2
Transport	nil	nil	0.4	2.8
Own Use & Losses	2.8	3.9	5.0	6.1
TOTAL	**58.6**	**82.1**	**104.7**	**131.8**

Source - CERA
Note! – This table does not include gas injected into oil reservoirs

Table 4 - Future Gas Sector Demand - Low Scenario
(Bcm per Year)

Year	2000	2005	2010	2015
Residential/Commercial	17.6	19.8	21.9	23.6
Industry	15.6	20.7	24.1	26.9
Power Generation	22.6	29.8	34.5	38.5
Transport	nil	nil	0.2	0.8
Own Uses & Losses	2.8	3.5	4.0	4.5
TOTAL	**58.6**	**73.8**	**84.7**	**94.3**

Source – CERA
Note! – This table does not include gas injected into oil reservoirs

The estimates of the demand for gas arising from these scenario assumptions are shown below in Tables 3 & 4.

The contrast between the demand for gas in the two scenarios is substantial. The prospect for these being achieved will depend very much on the growth in the economy providing the general population with a level of disposable income to enjoy the benefits offered by a more intensive use of electricity, and more oil to give greater mobility. For comparative purposes it is useful to note that the 2010 projection of gas demand in the High Scenario is greater than each European country's gas consumption today. Only the USA and Russia are greater! Total Primary

region seek transit through Iran? Much could depend on the oil export potential of Iran and the under-utilisation of its export facilities should production stay at the current levels.

Improved economic performance of the total Iranian economy is almost certain to lead to increased consumption of energy - particularly oil - to meet the increased demand for (private)transport; and gas - to meet the increase in industrial demand for energy. A policy decision to increase the levels of gas injection into the oil fields to arrest their pressure decline and improve the ultimate oil recovery efficiency of the fields would require a very substantial increase in gas production and transportation capacity,and a very large call upon the financial resources of the country.

The proposed development of the South Pars field, when fully implemented, is likely to provide adequate gas for internal Iranian consumption plus a major addition to the 30 bcm/year currently available for re-pressuring the oil fields of south east Iran. The options available to Iran for utilisation of their gas also include the possible export of it as LNG or pipeline gas. The uncertainties of technology in the oilfields and the commercial value of gas in the international market place will complicate an assessment of the economic value of gas for improved oil recovery, against its value as an exportable commodity.

This paper looks at some of the potential opportunities for Iranian gas and the major issues, uncertainties and risks facing the industry as Iran seeks to re-establish itself in the international gas industry.

2. ENERGY IN IRAN - THE PAST

The basic facts about the Iranian energy industry at the start of the year 2002 are well known, but it is useful to review them briefly at the start:

Table 1 - IRAN - Reserves of Oil & Gas

Oil	89.7 Billion Barrels
Gas	23.0 Trillion Cubic Meters

Table 2 - IRAN - Production Levels for Oil & Gas

Date	1976	1979	1981	1985	1989	1992	1996	2000
Oil – million bbl/day	5.92	3.18	1.33	2.22	2.87	3.53	3.71	3.77
Gas* – Bcm/year	21.3	19.8	7.15	14.4	21.5	25.0	40.2	60.2

Source: BP Statistical Review of World Energy, 1980,1987 and 2001
**Note: Gas production figures exclude gas that is flared or recycled.*

The production figures for oil illustrate the huge changes that have occurred over the last 25 years. Production peaked at almost six million barrels per day in 1976, but collapsed to a low of 1.33 million barrels per day by 1981 as the full impact of the revolution of 1979 and the start of the war with Iraq in 1980 was felt. Some recovery in production levels was achieved in the 1980s but the three million barrels per day level was not exceeded until 1990 following the cessation of hostilities with Iraq in 1988.

A key event during this turbulent period was the decision to re-start gas injection into three or four of the major oil fields - a plan conceived in the 1970s, but interrupted by the war. The injection rate rose steadily from about 1983 onwards reaching a rate of some 30 bcm per year by the year 2000. The cumulative volume of gas injected over the period was approximately 160 bcm - a drop in the ocean compared with the needs of the oil reservoirs to maintain and/or increase oil productive capacity in the future.

3.THE FUTURE DEMANDS FOR GAS

The long term development plans for gas are driven by two key factors - the increasing use of gas in the internal energy economy as a substitute for oil, and the injection of increasing quantities of gas into the oil reservoirs to stimulate increased oil productive capacity. Oil exports remain the key economic driver in the country generating some 80% of hard currency earnings and roughly one third of the country's budget. Fears exist that without an extensive programme of gas injection into the oil reservoirs there could be a loss of productive capacity as high as 200,000 to 300,000 barrels per day each year!

3.1 - Gas in the Internal Energy Economy

The policy of replacing oil consumption by natural gas for internal use has strong economic support. Gas in Iran is relatively cheap to produce by international standards and can release oil for export. This policy has been successful as oil demand as a proportion of Total Primary Energy consumption declined from 63 to 50 percent over the last five years of the 1990s, while gas increased its share from 34 to 48 percent, reaching 50 percent in year 2000 - about 60 bcm.

Power generation capacity has increased to 31.5 GW, some 80 % of which is now gas fired. Growth in this

ARTICLE

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NATURAL GAS in IRAN: CHALLENGES & OPPORTUNITIES

Michael Clegg
Senior Associate, Cambridge Energy Research Associates

1. INTRODUCTION

The break-up of the Soviet Union and establishment of the Central Asian Republics as Independent States in 1991/2 have transformed the political and economic map of the Central Asian Region. Nowhere has change been so marked as in the Oil and Gas Sector, where the enormous potential of the region has proved very tempting to Western and other foreign oil and gas companies. Over the next decade the region's contribution to the world's energy demands will be very significant, provided the key missing links in the chain from well-head to final consumer have been completed. Those missing links are the infrastructure to deliver the oil and gas to the world's consumers. At the same time, the Central Asian Republics can regain some of their status in the global oil business that was lost at the end of the eighteenth/early nineteenth century.

Iran sits at the southern periphery of this Central Asian Region commanding a key access to the Arabian Sea and Indian Ocean. In addition it has a great inheritance of energy assets - some 9% of the world's conventional oil reserves, and 15% of the world's gas reserves. This should be compared with the reserves of the Central Asian Republics - the Former Soviet Union excluding Russia - 2% for oil and 3.5% for gas.

Iran has yet to establish itself as an international gas player that would complement its role in the global oil business - for reasons of policy and politics, plus the disruptions to the economy resulting from the war with Iraq in the 1980s. These factors have also detracted from the exploitation of its advantageous location for the pipeline transit of Central Asian oil to Far East and world markets via sea-borne export facilities in the South of Iran. The first round of the battle for the transit pipeline routes for oil from the Central Asian Republics has been lost - they will travel west, not south. Will future expansions of oil production and exports from this key Central Asian