

## Iraq National Oil Company (INOC) Case Study

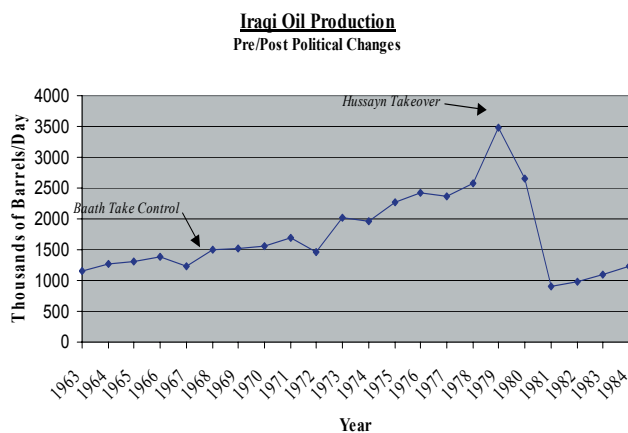
By Donald Ian Hertzmark and Amy Myers Jaffe\*

### Introduction

Iraq holds an important place in the political development and economic trend of the international oil market both historically and at the present time. Iraq's proven oil reserves are the second largest in the world, behind only Saudi Arabia's 260 billion barrels, at 120 billion barrels, and its oil export policy has been a critical element in setting international oil supply and pricing for over 30 years. Iraq was a founding member of the cartel of the Organization of Petroleum Exporting Countries (OPEC) and was among the first of the major oil producing countries to nationalize its oil fields in the 1960s. The country's Iraq National Oil Company (INOC) was an early leader in international oil policy and could play a similar role in the future, depending on the inclinations of a new Iraqi government.

Iraq's production today stands at 1.9 million barrels a day or 2% of total world oil supply. In 1979, Iraqi production stood at 4 million b/d, and the country was OPEC's third largest producer after Iran and Saudi Arabia.

Figure 1: Iraq's Oil Production History



In recent years, war, economic sanctions and now civil strife have prevented Iraq from substantially increasing or expanding its oil production capacity. But specialists agree that the oil potential of Iraq is significant and the degree to which the country can realize such potential will be a major factor influencing oil supply and pricing trends in the coming two decades.

Of Iraq's 74 discovered and evaluated oil fields, only 15 have been developed. Iraq's western desert is considered to be highly prolific but has yet to be explored. There are 526 known structures that have been discovered, delineated, mapped and classified as potential prospects in Iraq of which only 125 have been drilled. Six of the 74 known fields are

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deemed giant, containing more than 5 billion barrels, while some 23 are classified as large (between 500 million-5 billion barrels) and the remaining 45 labeled as medium (50-500 million barrels) to small (less than 50 million barrels). A commitment to a significant investment program could probably allow Iraq to return to its historical production levels of between 4 to 5 million barrels a day in the next decade. Thus, its oil policy and industry structure will have critical influence on the international oil industry in the coming years.

This paper will focus on the prospects for Iraq's oil industry in the future and will argue that Iraq could play a role in the 21<sup>st</sup> century similar to its past role in OPEC but that it will have to overcome difficult political hurdles to reestablish its oil industry.

Decisions on how to structure its oil industry in the aftermath of the fall of the government of former president Saddam Hussein can potentially have significant bearing on the future of the world oil industry and oil geopolitics. Iraq's new constitution opens many questions about the fate of the country's oil sector and the merits of reorganizing its national oil company or devolving power in the oil sector to local regional authorities. Resolution of this issue could have direct bearing on the competitiveness of international oil markets in the years to come and the relationship between key oil producing states and the private international oil companies. This paper will discuss the implications of current Iraqi politics and stability for the progress of Iraqi oil production policies, investments in Iraq's oil capacity, and security of its oil exports to international markets.

### Government Structure And Organizational Policy

#### Inter-government Relationships

Iraq was an authoritarian government with a bureaucracy chosen for its loyalty to the regime. Inter-governmental relations in Iraq were managed by the Council of Ministers, which in recent years had been composed of the Foreign Minister, the Trade Minister and the Oil Minister. The Oil Ministry was the main organizational body in the oil sector and reported to the Council of Ministers, which in turn reported directly to the President. The Council of Ministers also reported to the committee on energy of the Parliament but the latter was mainly a pro-forma, rubber stamp body with no real oversight function. In addition to reporting to the Council of Ministers, the oil industry divisions had security and intelligence officers whose function was to report to the Ba'ath Party and the National Intelligence/Security service (Mukharabat) about the activities within that company and in competing companies. This structure served to consolidate the power of the President's inner circle and was ultimately used as an instrument of repression.

#### Regulatory Principles and Practices

There is no oil and gas sector regulator in Iraq. All functions of the oil and gas business are state-controlled. The government sets all prices and operates all infrastructure via a bureaucracy organized by functions and managed under the leadership of the Oil Ministry.

### Organizational Structure

A major reorganization of the oil sector took place in February 1987 around the same time that Mr. Issam Abdul Rahim al-Chalabi replaced Qassim Taqi al-Oraibi as Oil Minister. The reorganization initially set up several new organizations including:

- a) State Organization of Gas (SOG), which came to oversee the State Enterprise for Gas Distribution
- b) State Organization for Oil Refining (SOOR) (covering all refining through three subsidiaries covering south, center and north regions and administering State Enterprise for Manufacturing Oil)
- c) State Establishment for Oil Construction/State Company for Oil Projects (SCOP) (implementation of oil projects from design and engineering to construction and start-up)
- d) State Organization for Distribution of Oil Products (SODOP) which also took control of the State Establishment for Pipelines

In May 1987, major changes were initiated again, most importantly with INOC becoming part of the Oil Ministry itself. Prior to becoming part of the ministry, INOC reported to an independent board of directors and had a hierarchy similar to a corporate entity with a legal department, its own budget, an accounting, geology, transport and analysis department, among others, and independent hiring and firing practices.

In the second 1987 reorganization, three state agencies SOOR (refining), SOG (gas) and SODOP (products and pipelines) were disbanded and their activities became departments within the Ministry. Key features of this reorganization included:

- Northern Petroleum Organization and Central Petroleum Organization were merged to become the Northern Oil Company. Northern Oil Company, Southern Oil Company and State Company for Oil Projects (SCOP) were given the status of autonomous companies with their own managing directors.
- OPEC relations were consolidated into the newly created State Oil Marketing Organization (SOMO).
- The Oil Exploration Company (OEC) was created and then overtaken by the Iraqi Oil Drilling Company, which would undertake exploration activities on behalf of OEC.
- Two distribution companies were created: Oil Distribution Company and Gas Processing Company.

The Iraqi oil industry is currently structured around both regional lines and functional duties. The Oil Minister is the functional head of the industry, with several undersecretaries reporting directly to him. The State Oil Marketing Organization, which is responsible for external sales of all of Iraq's oil, had independent, elevated status and its executive director reported directly to the President of the country for many years. Below this hierarchy are 14 public companies, each led

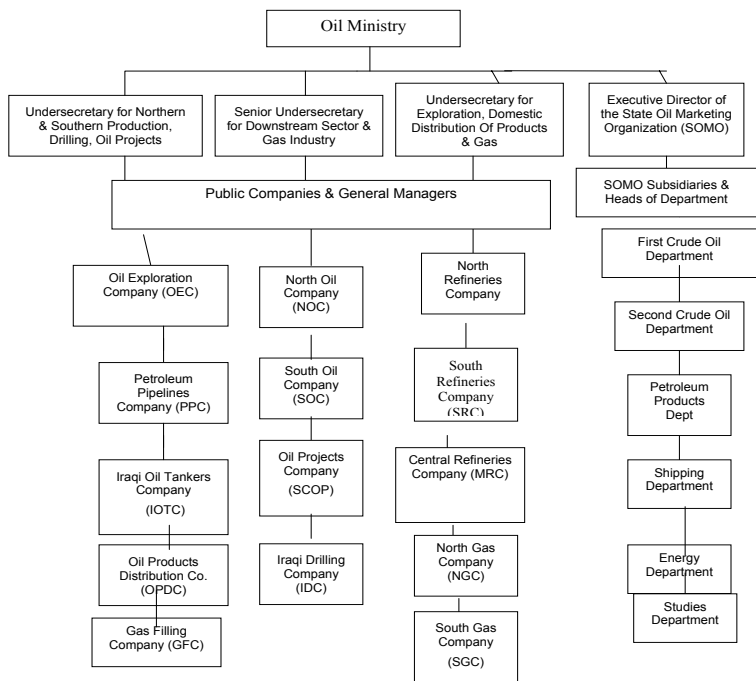
by a Director General and other senior staff.

The 14 companies include 2 upstream companies and 3 drilling service and exploration companies:

- 1) Oil Exploration Company (OEC)
- 2) Southern Oil Company (SOC)
- 3) Northern Oil Company (NOC)
- 4) State Company for Oil Projects Company (SCOP)
- 5) Iraqi Drilling Company (IDC)

Downstream activities were divided geographically between the Southern Refineries Co., Central Refineries Co. and the Northern Refineries Co. There were also geographically based gas companies, an oil tanker company, oil product distribution companies and a pipeline company. The overall organization of these companies is shown below.

**Organizational Chart for Iraqi Industry as of 2002**



### Senior Management

Beginning with the Oil Minister Issam Chalabi in 1987, the senior management of the oil industry became politicized and executives were promoted mainly on the basis of loyalty and ties within the Ba'ath party and strength of links to the ruling elite. In comparison, prior to 1980, candidates were fielded for promotion largely on the basis of merit and performance. Candidates were identified by the national oil company based on examinations – vetted by the Palace and the Ba'ath party - and selected for training abroad.

At present, Iraq's oil sector is dominated by its Energy Council, which is chaired by deputy Prime Minister Ahmad Chalabi. An Interim Oil Minister currently serves as the defacto head of the Iraqi industry which remains divided between the South Oil Company, which operates the southern oil fields in and around Basrah and the North Oil Company, which is responsible for the Kirkuk oil field and surrounding production.

### ***External Relations***

After nationalization, Iraq permitted no foreign direct investment in its oil industry and did not consider any until the mid-1990s. Since 1996, under United Nations Sanctions, all procurement of international goods and services was conducted either by the United Nations itself or with United Nations oversight. Prior to sanctions, Iraq conducted project based international procurement system, utilizing international tenders and followed a national law for competitive bidding processes, with final short-listing procedures. On occasion, the award of a major international contract would be altered and overruled by geopolitical considerations at the intervention of the Palace or Foreign Ministry.

In the late-1990s, as a part of an attempt to garner support for the lifting of sanctions, the Iraqi regime initiated negotiations for oil field contracts with IOCs that would be implemented after international sanctions were lifted against the country. Talks were conducted by the Oil Ministry at undersecretary level. The ministry appointed three teams, each of which was responsible for negotiations by geographical region or in some cases, by individual foreign company. During this period, Iraq developed its own style of Production Sharing Contracts (PDS) in which the state's participation was guaranteed through a carried 25% interest. The PDS contracts included work and expenditure commitments, cost oil, profit oil (9% contractor/91% Iraq), rate of return and cost recovery (40%) variables as well as production bonuses. There were no royalties attached but an income tax was planned. The Iraq negotiators also conducted talks about service-style contracts known as Development and Production Contracts (DPCs) for already delineated structures. DPCs (essentially buyback contracts) also specified a 25% carried interest for an Iraqi entity and included target production level, duration of contract period, development plan, investment levels, remuneration fee, cost recovery, option to lift oil, and technical assistance. Again, no royalties were assessed. Terms included maximum cost recovery of 50% of produced oil and remuneration fee maximum 10% of production.

Costs of maintaining pipeline and other infrastructure were borne centrally by state. Where oil is produced under PSC or DPC, Iraq had planned to charge a transportation tariff payable to state. Contracts specified that natural gas would be utilized by state.

Signature bonuses ranged around the \$50 million level.

### **Operational Policies Pre-2003**

#### ***Oil and Gas Depletion***

The Oil Ministry was responsible for all policy, planning and national goal setting. Regional public companies (NOC, SOC, COC) implemented policies for preventing oil and gas production decline rates but at great difficulty given sustained low budgets through the war years of the 1980s and into the 1990s and after 1996, given United Nations sanctions.

#### ***Oil Revenue Accounting***

Oil revenue accounting system was taken over by the

United Nations in 1996 under the oil-for-food humanitarian program. Pricing policies were set by SOMO based on market trends and technical analysis, with a United Nations oversight committee auditing and inspecting pricing and contracting terms on a monthly basis to prevent diversion of funds. All monies were paid directly to UN escrow account. Prior to the Gulf War, the SOMO director general determined prices based on technical market factors with direct approval by the President of the country. Revenues reverted directly to the Central Bank by SOMO.

#### ***Gas and Products Pricing***

Prices for natural gas and petroleum products were set by the state.

#### ***Funding Principles***

Nationally centrally planned economy and oil sector budget process, with state sector companies owned 100% by the Iraqi government. Auditing handled by the General Auditing Bureau on a ministry by ministry basis. Iraq had extensive international loans from international banking institutions and foreign countries that were trading partners.

#### ***Financial Policies***

There are no publicly available financial accounts for the Iraqi oil sector. There is no published information on which accounting standards have been adopted or on remuneration. The General Audit Bureau reported to the Council of Ministers on compliance of each ministry with its annual budget. Each public company had its own auditing department.

### **Iraq's Upstream Oil Prospects: Overview**

There is little doubt among knowledgeable industry professionals that Iraq possesses great potential to oil production and export capacity significantly, albeit with massive investment. Iraq's proven oil reserves of 112 billion barrels, with as much as 220 billion barrels of resources deemed probable, provide an excellent resource base for future production increases. Of Iraq's 74 discovered and evaluated oil fields, only 15 have been developed. Iraq's western desert is considered to be highly prolific but has yet to be explored. There are 526 known structures that have been discovered, delineated, mapped and classified as potential prospects in Iraq of which only 125 have been drilled. Six of the 74 known fields are deemed giant, containing more than 5 billion barrels, while some 23 are classified as large (between 500 million-5 billion barrels) and the remaining 45 labeled as medium (50-500 million barrels) to small (less than 50 million barrels).

It will take Iraq several years to return to its pre-1990 production level of 3.5 million bpd, assuming the security environment can be stabilized. Iraq has previously stated a desire to expand its oil production capacity to 6 million bpd. This is geologically possible but would take a number of years and tens of billions of dollars of investment.

Iraqi oil production is concentrated in two geographic areas in Northern Iraq around Kirkuk and in the south in and around Basra. The Kirkuk oil field accounts for the greatest proportion of Northern oil production, which is currently lim-



ited by repeated attacks on surface facilities by insurgents. The second largest northern field is Bai Hassan. Most northern production is exported via pipeline through Turkey.

At present, the most important producing field in Iraq is the southern field of Rumaila, which accounts for more than half of the Southern oil production. Other large southern fields include Al-Zubair, Missan and West Qurna.

The southern fields depend on water injection systems to maintain pressure and gas treatment facilities. The Rumaila field has been damaged from over-drilling and poor reservoir management. Remediation efforts need to be implemented to reverse coning and restore pressure at the field but are currently difficult to put in place due to the generally poor security situation, bureaucratic delays and problematic transparency and efficiency for allocating budgetary expenditures. Improved metering systems are needed at the fields to allow proper analysis of production conditions but widespread corruption, where theft of output is rampant, has created a pool of vested interests wanting to block such modernization. Production from southern oil fields is currently exported via the Gulf port of Mina al-Bakr. There are pumping stations at North Rumaila and Bin Umar that feed crude to the Mina al-Bakr port. There are two 800,000 b/d pipelines (Zubair-Fao and Rumaila-Fao) that feed the port.

#### **Oil Production Expansion Potential**

Since at least the mid-1990s, key upstream officials in the Iraqi oil industry have identified several fields as potential contributors to a production expansion program. The potential increase in output includes both improvements in existing fields and output from either new or significant expansions in currently producing fields.

#### **Stage 1 National Oil Company Investment for Rehabilitation – Target Production 3-3.5 mmbd**

Fields	Potential Production Rate Thousand barrels a day	Capital Cost (millions \$)
Galabat/Qamar/Qarachoq Kashm al-Ahmar	120	500
Qayara/Najma/Jawan/Qasab	170	500
East Baghdad/ Balad	120	800
South Rumaila/Mishrif <sup>+</sup>	230	850
North Rumaila/Mishrif <sup>+</sup>	160	750
Zubair/Mishrif	60	150
Luhais/Suba <sup>+</sup>	80	200
North Rumaila CG6	60	250
<b>TOTAL</b>	<b>1 million barrels/day</b>	<b>\$4 Billion</b>

+ Foreign oil company sought deal under Hussein Regime.

#### **Stage 2: Rehabilitation of Other Major Fields – Target Production Total 4.5-5 mmbd**

Field	Production Rate Thousands barrels a day	Capital Cost millions \$
Majnoon+	600	\$3 to \$8 billion
West Qurna+	600	\$3.5 billion
Bin Umar+	440	\$3.4 billion
Nasiriyah+	300	\$1.9 billion
Halfaya+	225	n.a.
Ratawi+	200	\$1.3 billion
Gharaf+	100	n.a.
Al-Ahdab+	100	\$1.3 billion
Tuba	180	n.a.
Rafidain+	75	n.a.
<b>TOTAL</b>	<b>2,820</b>	<b>\$14.4 billion to \$25 billion</b>

+ Hussein government planned to develop these fields with foreign participation.

#### **Options for Transforming Iraq's Oil Industry**

In the summer of 2004, Iraq's interim government set up a Supreme Oil and Gas Council to formulate the public pol-

icy for managing the hydrocarbon resources of the country. The Council began to oversee plans for the industry such as crude oil marketing policy, domestic oil products pricing, and the terms of service for members of the ministry of oil and the companies under its purview, but it never addressed key issues related to rebuilding Iraq's productive capacity such as major investments in restoring capacity and how such investments will be financed. The Supreme Oil and Gas Council is designed to be empowered to issue foreign contracts, but the dispensation of foreign participation in Iraq's upstream oil exploration and development of its fields has been deferred until which time a permanent government is in place.<sup>2</sup>

At its first meeting in August 2004, the Supreme Oil and Gas Council (SOGC) proposed the reestablishment of the Iraq National Oil Company (INOC). As proposed, INOC would be a public company owned by the state and responsible for all technical and commercial aspects of exploration, development and production of the country's oil and gas resources. INOC would oversee the operations of four existing operating firms (now under the direction of the Oil Ministry) including South Oil Company, North Oil Company, Iraq Drilling Co. and Oil Exploration Company. Under the proposal, a board of directors would be created for INOC, with the minister of oil serving as the board's chairman. The board would also include the CEO of INOC and oil executives and others recommended by the Ministry of Oil.<sup>3</sup>

While the state oil company model is consistent with cultural and historical preferences in Iraq, catering to nationalistic sentiment among the population and the history of state control of the economy, it remains unclear whether this form of organization will be adopted following ratification of a new national constitution. Senior members of Iraq's existing oil industry hierarchy argue that a national oil company structure would reduce friction over the dispensation of oil receipts by centralizing revenues and permitting oil earnings to go directly to the national treasury and to the federal budget, eliminating regional or local level disputes to a percentage of oil revenue from production located physically in a local area. This option has been supported by Iraq's technocratic elite, including the acting and former oil ministers, and the Allawi national list.

However, during the constitutional process, regional leaders resisted this structure. The politics of this issue is complicating Iraq's ability to forge a permanent government structure with full federal authority. Recent constitutional language has suggested that a more devolved federal approach to oil revenue distribution will prevail, with sizable oil revenues reverting to the provinces, along with additional revenues for producing areas. In particular, key Kurdish and Shi'a leaders asserted the rights of local communities to preserve their direct access to the inflow of oil revenue. Article 109 of the Constitution states that "Oil and gas are the property of the Iraqi people in all provinces and districts." Article 110 asserts significantly "The federal government handles, *in cooperation with the producing province and dis-*

*strict cabinets*, the management of oil and gas extracted from the present fields, provided the proceeds would be evenly distributed, in keeping with the demographic distribution all around the country. In addition, a share shall be allotted, for a specific period of time, to the afflicted provinces, which were unjustly deprived by the previous regime, and later affected, in a way to secure a balanced development of different areas of the country. This shall be regulated by law.” Article 111 specifies “everything stipulated in the exclusive areas of expertise of the federal authorities falls within the provinces’ prerogatives. The other mutual prerogative of the federal government and the provinces, in case of conflict, will give priority to the province law.”<sup>4</sup>

Regional leaders are pushing to have newly developed fields fall under the jurisdiction of provincial authorities. In particular, local leaders are lobbying for the rights to legitimize all agreements pertaining to exploration and development that have been, or might be, signed by local authorities. As far back as June 2004, Kurdish leaders sent a letter to U.S. President George W. Bush in which it was requested that the United States support their plans to “own and manage Kurdistan’s natural resources, and in particular our efforts to develop new petroleum resources in the Kurdistan region...”<sup>5</sup> Kurdish leaders have met separately with foreign oil company representatives about investment deals in Northern Iraq. In the last years of Saddam Hussein’s rule, Kurdish groups were cut into northern oil shipments through a 13% tariff. Kurdish candidates gained 20% in recent elections in Iraq, making it hard for other winning groups to form a government without the input of Kurdish leadership. Last February, Canada’s Heritage Oil announced that it had formed a joint venture with local Eagle Group to pursue oil investment projects in Kurdish areas.<sup>6</sup> But some oil deals pre-existed the U.S. campaign in Iraq. Jalal Talabani, leader of the Iraqi Patriotic Union of Kurdistan (PUK) signed oil deals with two Turkish companies, General Energy and Pet-Oil, prior to the U.S. campaign in Iraq.<sup>7</sup>

Iraqi politician Ahmed Chalabi has also been reported to be negotiating oil investment contracts with foreign oil company representatives, signaling the possibility that some Shia groups will also look favorably on regional development authority for oil resources.<sup>8</sup> The issue of oil revenue splits is a thorny one with activism evident at the popular local community level. The General Union of Oil Employees, which comprises 15,000 workers of the South Oil Co., went on a 24-hour strike last July, for example, demanding that a larger share of oil revenue be sent back to their local economy. The strike, designed to influence the constitutional process, came after the governor of Basrah, Mohammed Mosbeh Al-Waeli, called for the central government to give a fair share of oil revenues to his region. Statements outlining demands cited Basrah’s poverty, high unemployment, damaged sewage system and electricity grid and limited medical services as key grievances to be addressed.<sup>9</sup>

In the past, state-owned entities were responsible for the production and development of virtually all the country’s oil and gas. No foreign oil company has operated with equity

interest in Iraq since 1975. But Iraq’s decision to self-finance its industry in and outside the oil sector over the 1980s and its lengthy war with Iran left the country with high national debts and a commodity-price driven economy. Moving forward, at oil prices of \$35 a barrel, financing future capacity expansion out of current cash flow will take about \$3 billion annually or about 10% of the government’s share of oil proceeds. At \$55/bbl a \$5 billion annual expansion program would take a similar 10% share of the government’s net proceeds from oil sales. A more ambitious expansion program or a similarly sized program under lower oil price scenarios would require a higher proportion of government annual revenue. Refinery rehabilitation and gas system expansion will also need to be funded either from oil proceeds or from outside investment.

Achieving higher levels of output through self-financing, though possible, will present a number of tough and potentially controversial decisions, including the need for rapid corporatization of the national oil company, possible underinvestment in other areas of the country’s economy, and potential limitations on oil sector transparency. It is key to remember that the options chosen, and when they are chosen, will have implications for the development of the overall economy and society, for the speed and level of capacity expansion that can be achieved, and for the exposure of investment budgets to changes in oil prices.

There are three major economic impacts of self-financing oil investment. They include 1) Iraq’s government will control the equity in its oil industry, making it easy to cooperate with OPEC on production sharing and capacity expansion levels; 2) more of the domestic economy will be dependent on the oil sector than if external financing is tapped; and 3) the country’s fiscal policy will be extremely dependent on world oil price levels.

Given the likely investment needs of Iraq’s oil sector - more than \$20 to \$30 billion to raise output to the 5 mmbd range - the question of how to raise such sums has to be addressed.

At the level of overall policy, significant sums of debt and equity are difficult to organize or attract without a well-organized sector legally defined and sanctioned. Thus, the outcome of the drafting of Iraq’s constitution and the development of its political and court systems will have tremendous implications for the health of the oil sector. It is important to note that, even if Iraq decides to rely on its own sources of funding, a substantial degree of corporatization for its newly-constituted INOC will still be required to organize and make good use of capital volumes that will necessarily run to the billions of dollars annually. Many countries that have chosen to self-finance and keep upstream sectors closed to foreign participation have found that this strategy has generally led to both production and fiscal difficulties; if not often in the immediate term, then more frequently in the longer run.

Over the next several years, the newly constituted Government of Iraq will need to make a large number of critical decisions on the future of the oil industry, the role of oil revenues in funding other national reconstruction efforts, and defining the role of the national oil company entity itself in

the oil industry's restructuring.

Improved management in the oil sector will have to serve as a basis for any program to expand production. Issues related to the role of an Iraqi national oil company or a devolved structure of regional oil companies will have to be tackled head on. Some governments have opted to use their NOCs as a tool to achieve wider policy objectives such as employment, community services, revenue generation, or economic diversification. In some cases, decisions regarding the utilization of the NOC's resources have been made on political rather than economic grounds. Although this may be judged to be beneficial to the nation or the regions as a whole, additional costs and non-core responsibilities that might be imposed on the emerging new Iraqi national oil company or regional entities would affect profitability and the ability to build core functions of oil production capacity management and expansion.<sup>10</sup>

The ability of Iraq to attract outside funds for capacity expansion and oil field development will be dependent on the policy steps taken by the government, including the attractiveness of fiscal terms offered to potential IOC investors; the legal and regulatory environment; and the establishment of appropriate roles for various federal, provincial, and local oil sector institutions.

In studying the possible involvement of international oil industry investment, Iraq will have to consider the experiences of other oil producing countries:

- **Upstream contractual arrangements** vary widely according to the history, domestic political circumstances, and goals of the host country.
- **Inadequate regard for the risks borne by IOC contractors** has led to less-than-successful investment programs and an inability to tender fully offered exploration acreage in a timely manner.
- **Countries with**

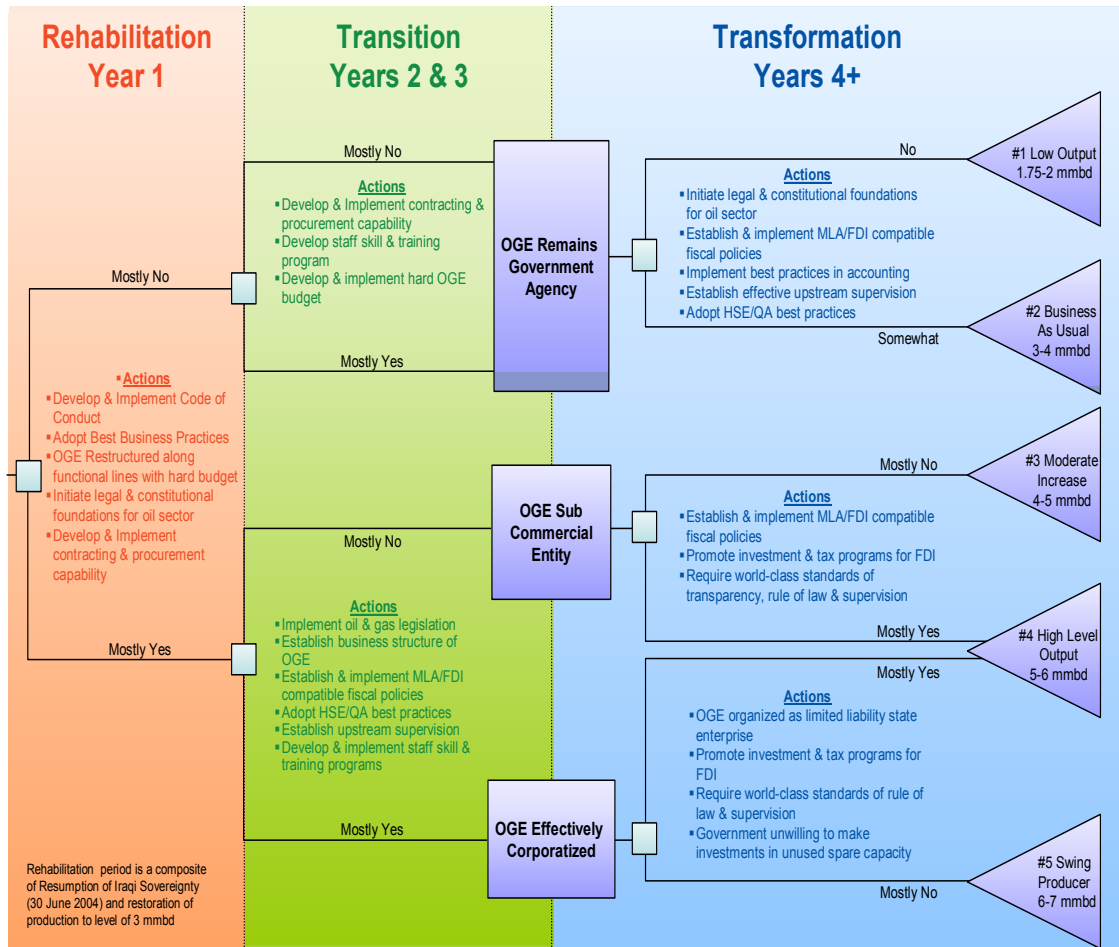
less attractive geology and governance such as Azerbaijan have been able to overcome their risk profile and pull in billions of dollars of investment by offering very competitive terms.

Contracting terms remain the major means of allocating risks and rewards from exploration. Should external financing be sought, it is worth remembering that in the past countries that did not offer risk-adjusted rates of return equal to or above other nations were unable to achieve significant levels of investment, regardless of the richness of their geology (e.g., Iran, July 2003 round; Venezuela, post 2001 tenders; Saudi gas initiative; Pertamina, 1990s).

Figure 2, below, is multi-dimensional timeline / scenario analysis that illustrates graphically the causal and temporal relationships between investment, governance and organizational actions taken by the Government of Iraq and corresponding levels of production. This chart illustrates the difficulties Iraq will have in achieving high levels of production—should that be considered a national aim—without a sequential series of management and governance actions within specified timeframes. While no initial set of actions is irreversible, certain governance and production outcomes could become impossible in the period in question without appropriate initial steps.

In particular, during the rehabilitation phase there are

**Figure 2: Key Milestones of Iraq's Oil Sector Rehabilitation and Transformation**





specific activities that will promote and enable a rapid return to former production levels, whilst being necessary preconditions to achieving even higher levels of production within a medium to long timeframe. The activities that must be completed successfully in the rehabilitation phase include (i) improved human resources, replacing many of the older technical staff; (ii) new and improved contracting and procurement mechanisms.

How such initiatives would be implemented under the new constitution remains unclear. To ensure success, new entities, whether they be federal or local must complete most or all of the following steps: (i) new oil and gas legislation; (ii) hard budgets for the INOC; (iii) improved human resource and training programs. Success in this transition phase will be necessary, but not sufficient, to achieve any significant rise in oil output. Indeed, even returning to 3-3.5 mmbd of oil output will require most of these activities to be successfully initiated within 1-2 years.

During the transformation phase, path dependence becomes critical. In particular, there are important ways in which the potential for significant increases in output will depend significantly on decisions taken in the very near future on staffing, contracting, investment and transparency/rule of law. These path dependencies include the following ones:

Decisions during Transition Phases establish limits of what can be accomplished - *Path dependence takes over:*

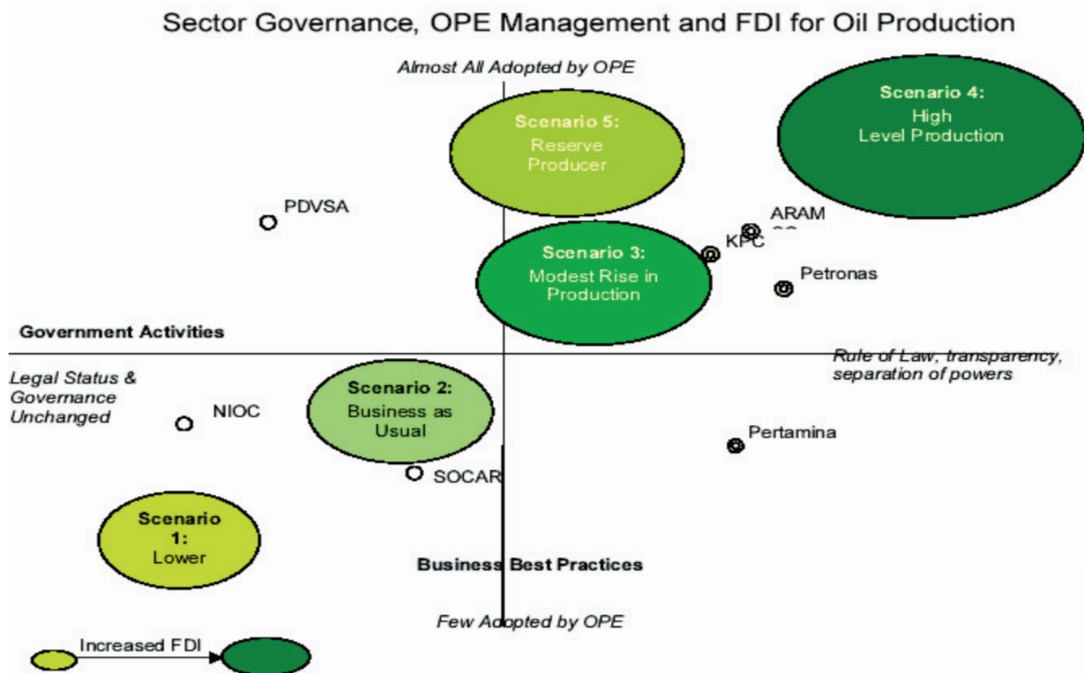
- 1) An aggressive program of legal and management reform is necessary to achieve one of the higher output scenarios (Scenarios 3, 4, 5),
- 2) The momentum established by the early efforts should permit substantial gains in production even if a full set of Transformation phase reforms is not adopted.
- 3) Key decisions to ramp up production involve management and legal matters as prerequisites for a high tempo of investment and production activity;
- 4) Difficulties in these regards (Scenarios 1 and 2) will limit the potential of the Transformation stage to - at best - a small increase over pre-war levels of output.

As can be seen from Figure 2, a history of success in health, safety and environment contracting and law can set the stage for significantly increased investments by out-

side parties. Given the experiences of the recent past with changes in legal regimes, it is unlikely that the IOCs will be willing to put up the \$20-30 billion required to qualitatively transform the country's oil sector without "yes" answers to most of the questions posed in Figure 2 on staffing, contracting, rule of law and transparency. As Iran has found, it is extremely difficult to overcome many years of non-standard practices in external relations and investment.

### Strategic Issues

There will continue to be much debate about the strategies Iraq should undertake in its oil sector and in its restructuring of its national industry. The consequences of its decisions will have major implications for future oil market trends and global oil pricing and security, just as Iraq's decisions to nationalize its oil industry in the 1960s played a pivotal role in formulating OPEC strategies and raising the price of oil worldwide. Because of the extensive size of its resource base, the manner of Iraq's participation in oil markets will be a major feature of the next decade and beyond. If Iraq chooses to reconstitute its national oil company under strategies similar to the manner in which it participated in international oil trade in the 1960s and 1970s, it could become a leader in working together with other OPEC countries to restrain future investment in oil resources and to limit output to achieve sustainably high oil prices for a significant period of time until backstop



technologies and energy efficient technologies could be brought to bear in the market by consuming countries.

If on the other hand, Iraq were to restructure its industry to devolve investment authority to the regions, this is likely to increase the chances that these smaller, more regionally focused entities will allow foreign direct investment as leaders in these local communities have already signed foreign

investment deals or at least held meetings for this purpose. The consequences of increased foreign participation in local investment in Iraq is likely to lead to more competitive structures for global oil markets in general and thereby lower energy prices. It is also possible that local leaders will consider privatizing key entities or aspects of their oil sectors.

The figure on the previous page indicates the types of operating conditions that accompany varying levels of transparency and rule of law, as preconditions for increased FDI in Iraq's oil industry.

If international oil companies can undertake significant investments in Iraq, then it becomes *possible* that the total increase in expanded Middle East capacity could become larger than the increase in Asia demand.<sup>11</sup> Privatized ownership of oil assets would make it harder for Iraq to adhere to production expansion restraint coordination and production sharing agreements proposed by OPEC.<sup>12</sup> If Iraqi production were to expand to such a large extent that Asian markets could be supplied totally by Middle East producers with no imports required from more distant supplies in Africa or the Atlantic Basin, then the Asian crude oil price premium might disappear. However, Iraq faces many hurdles before it can attract direct foreign investment and it is unlikely that this process will progress quickly in the near future.

#### Footnotes

<sup>1</sup> "Plans for Iraq Spell Trouble for Oil Sector" Petroleum Intelligence Weekly, September 5, 2005

<sup>2</sup> "Iraq Establishes Supreme Oil and Gas Council" Middle East Economic Survey (MEES) 47:29 A3 July 19 2004

<sup>3</sup> "Iraq to Establish National Oil Company" MEES 47:35 August 30, 2004 A4

<sup>4</sup> Oil and Gas Journal

<sup>5</sup> "Iraqi Kurds Demand Right to Own and Manage Northern Oil Reserves" MEES 47:24 June 14 2004 A4

<sup>6</sup> News In Brief, Petroleum Economist, Feb. 8, 2005, p. 41

<sup>7</sup> "Turkey to develop oil fields in Northern Iraq" Xinhua News Agency, May 20, 2003; "Kurds Go It alone with International Oil Deals" Independent, (London) May 18, 2003,

<sup>8</sup> New York Times

<sup>9</sup> "Oil Workers in Southern Iraq Demand Bigger Share of Income from Exports" International Oil Daily, Tuesday, July 19, 2005

<sup>10</sup> An example of increased exposure to non-core businesses is found in Venezuela, where PDVSA has taken ever-more responsibility for certain downstream businesses that would not normally concern a national oil company.

<sup>11</sup> Venezuela once again provides the counter example. High oil prices have more than offset what would otherwise be a disastrous fall in oil output for the country.

<sup>12</sup> Note that if Iraq chooses to become a reserve capacity OPEC member, then it will result in less FDI than would a similar increase aimed at export maximization, simply because investors will be loath to invest billions that can potentially sit idle.

#### Appendices

##### 1 Gas Upstream Requirements

Iraq holds a minimum of 110 trillion cubic feet (Tcf) of proven natural gas reserves, as well as approximately 160

Tcf in probable reserves. Much of this gas has remained untapped. We expect that gas development will take a backseat to oil development where markets and profits are more immediately tangible. Iraq has already discussed gas exports to Turkey in competition with Russia, Iran and other key gas producers.

In 1997, Baghdad reached an agreement with Ankara to build a \$2.5 billion 1,380-km gas pipeline from northern Iraq to southwestern Turkey, which could possibly be linked to Europe. The proposal would involve the transport of 10 Bcm of Iraqi gas annually to Turkey from five fields in the north -- Al-Anfal, Al-Mansuriya, Jaryat Pika, Al-Khasham al-Ahmar and ChemChemal. Development of these fields and related infrastructure is projected to cost \$1.7 billion. There has also been speculation that a new Iraqi government would consider building a natural gas export system to Jordan.

Associated gas primarily comes from the Kirkuk, Ain Zalah, Butma and Bai Hassan oil fields in northern Iraq, as well as the North and South Rumaila and Zubair fields in the south. The Southern Area Gas Project, brought online in early 1995, consists of nine gathering stations and has a processing capacity of 1.5 Bcf/d. Gas gathered from the North and South Rumaila and Zubair fields is transported by pipeline to a 575-Mmcf/d natural gas liquids (NGL) fractionation plant in Zubair and a 100-Mmcf/d processing plant in Basra. At Khor Al-Zubair, a 17.5-MMcf LPG storage tank farm and loading terminals were added to the southern gas system in 1990. The Al-Anfal field in northern Iraq produces the only non-associated gas in the country at about 200 Mmcf/d. Al-Anfal production is piped to the nearby Jambur gas processing station. Al-Anfal has estimated reserves of 4.5 Tcf, of which 1.8 Tcf is proven. In November 2001, there were reports that Iraq had discovered a large non-associated natural gas field in the Akas region of western Iraq, near the border with Syria, and that it held an estimated 2.1 Tcf of reserves.

##### 2 Downstream Investment Requirements

Massive repairs are also needed to Iraq's 4 major oil refineries and other smaller plants. Estimates are that Iraq's current refining capacity is below its 400,000 b/d of domestic demand. The country has 10 refineries and topping units, most of which are considered "environmental nightmares" as they have not had any spare parts to guarantee their clean operations.

Iraqi Refining Capacity --Post-Gulf War repairs (1,000 b/d)	
Refinery	Post-repair Capacity
Basra	126
Daura	100
Kirkuk	27
Salaheddin (Baiji)	140
North (Baiji)	150
Khanaqin/Alwand	10
Nasiriyah	27
Haditha	14
Muftiah	4
Qayarah	4
<b>Total</b>	<b>602</b>