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IRAQ'S OIL SECTOR: ISSUES AND OPPORTUNITIES

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Iraq's Oil Sector: Issues and Opportunities

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 stated proven oil reserves of 115 billion barrels -while perhaps somewhat overestimated during the rule of Saddam Hussein- are among the largest in the world. The country's resource base is considered the second largest in the world, second to Saudi Arabia, 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 oil producing countries to nationalize some of its oil fields in 1961. Iraq'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 around 2.0 million barrels a day (b/d) or 2.5% of total world oil supply. In 1979, Iraqi production stood at 4 million b/d, OPEC's third largest producer after Iran and Saudi Arabia. Oil production, which was averaging 3.5 million b/d prior to Iraq's invasion of Kuwait in 1990, began to decline in the 1990s in the aftermath of the Gulf war and the imposition of international sanctions against Baghdad. At the time of the US military action in Iraq in 2003, the country's oil production capability was estimated at around 2.5 to 2.7 million b/d. Production has averaged considerably less than that in recent years, at 1.5 million b/d in 2003, 2.00 million b/d in 2004 and 1.8 million b/d in 2005.

In early 2006, Iraq's oil production rates averaged around 2.06 million b/d, well short of the government of Iraq's projected target of 2.5 million b/d for 2006. However, since oil prices have been higher than projected, Iraq has been able to meet its budget revenue targets.

Problems with production over the past two years are primarily due to the lack of proper attention to reservoir management and due to inadequate maintenance of pumping stations, pipelines, and other infrastructure. An acute shortage of adequate crude oil storage facilities at the offshore loading terminals in the Gulf has worsened the impact of ongoing security and weather-related disruptions to production and exports. There has been little or no development of new fields since 2003. The main reason for this lack of investment has not been lack of funds, but rather the politicization of the oil ministry, the absence and/or exodus of trained personnel,

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and poor or corrupt management in the oil sector. The deterioration of the security situation in key production areas has only compounded the problems.

U.S. grant aid of \$1.72 billion was allocated for reconstruction of the oil sector under the Iraq Reconstruction and Relief Fund II, but the effort lacked proper coordination and oversight and failed to establish a strategic vision for prioritization of projects. Early efforts did not focus sufficiently on reservoir repair and rehabilitation due to political and public diplomacy concerns. Emphasis was placed on above-ground facilities such as gas oil separation plants, pipelines, and export facilities. According to the Department of Defense, only 22% of 69 engineering, procurement, and construction projects listed have been completed as of December 31, 2005.

US-directed aid programs for Iraq's oil industry have not resulted in the expected improvement in oil production. The four largest projects implemented included the Al-Fatah Crossing project, which was designed to increase flows to the Baiji refinery and the Iraq-Turkey pipeline; the Qarmat Ali Water injection system project for the Rumaila fields; the rehabilitation of the Gulf export terminal; and the rehabilitation of gas-oil separation plants. Of these projects, only the rehabilitation of the Gulf export terminal has been fully implemented successfully.

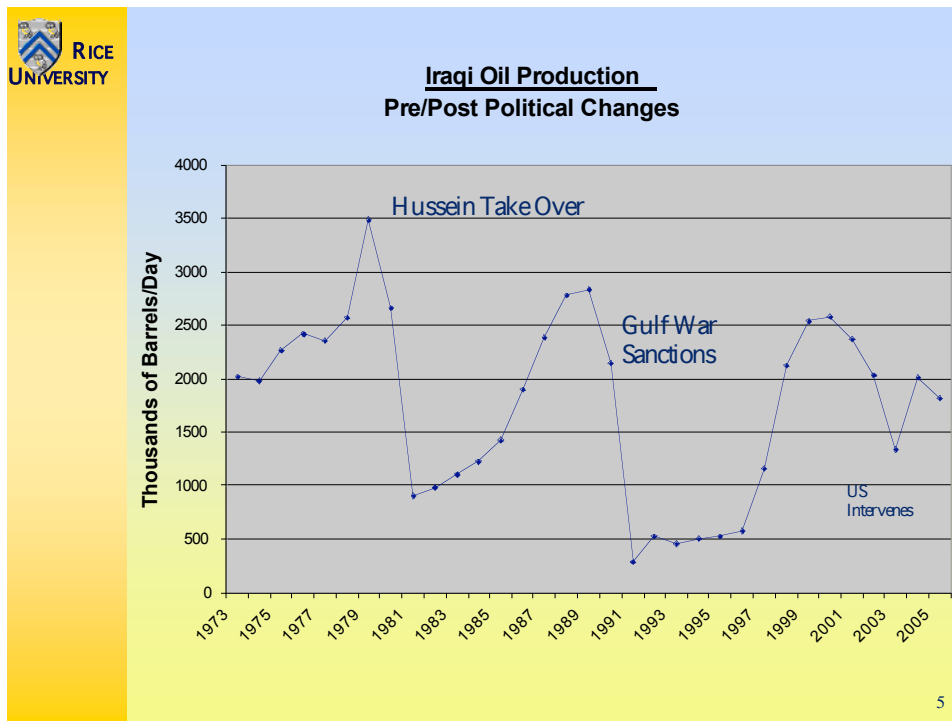
The Al-Fatah crossing project has been victim to insurgency attacks, and major damage has been sustained to the Baiji gas oil separation plant, preventing the processing of 300,000 b/d or more of oil production for export via Turkey. Water injection activities at the Rumaila fields experienced prolonged delays, and lack of technical training and experience is hindering the optimum implementation of water injection activities to boost production potential at the field. Experts have raised concerns that without proper execution of remediation at Rumaila, the fields' reservoirs may be damaged and productive capacity may be lost.

The lack of adequate security poses a major challenge for the government in the oil sector. Between April 2003 and October 2005, there were 282 documented attacks against existing oil infrastructure in Iraq. Iraq industry leaders report that the industry's daytime workforce is infiltrated by workers who moonlight as insurgents and target facilities that they themselves may

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have been involved in previous repairs. Sectarian and regional strife undermines the ability to operate facilities or the sector as a whole either efficiently or effectively.

Intimidation of key experts, either those trained abroad or those holding critical positions, has become a serious problem and hundreds of oil industry leaders have been killed or purged from the sector. This, combined with a looming gap in technical and managerial expertise due to Iraq's relative isolation over the past 25 years as the energy industry rapidly evolved, has seriously eroded the capacity of the Iraqi government to manage the oil sector. Without competent personnel, investments in reconstruction and maintenance of facilities may not be properly managed, and reconstruction of the oil sector could be considerably delayed. The need to expand and accelerate training of Iraqis in contemporary oil industry technical and management skills is urgent. International oil service companies remain reluctant to undertake work inside Iraq, due to the security situation and because payments to contractors have typically been chronically in arrears since 2003. These same companies also have high demand for their services elsewhere.



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In recent years, war, economic sanctions and now civil strife have prevented Iraq from substantially increasing its oil production capacity. But specialists agree that the oil potential of Iraq is significant and could be 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. 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 and 5 billion barrels). A major investment program could easily allow Iraq to return to its historical production levels of from 3 to 5 million barrels a day in the next decade. Thus, Iraq's oil policy and industry structure will have critical influence on the international oil industry in the coming years.

The Iraqi government projects a rise in production to 2.7 million b/d in 2007 and 3.1 million b/d in 2008, and a rise in exports from 1.4 million b/d in the first half of 2006 to 2.5 million b/d in 2008. These projections are unrealistic given the government's current policies and the security situation. Until these obstacles are overcome, Iraq will be able to do little more than maintain its present production level, if that.

Iraq has the potential to expand its oil production capability by 2010, but any expansion is likely to be well below the Oil Ministry's stated target of 4.0 million b/d. Achieving even a more modest objective of 3 to 3.5 million barrels a day will be quite a challenging task, requiring creation of corporate structures and greatly improved management systems as well as an ethnically-blind, merit-based reassignment of competent managers to plan and oversee implementation of an ambitious list of major oil field projects. Significant expansion of Iraq's production would likely entail development of new fields and production areas not currently in operation. Training programs for the Iraqi industry are being undertaken in a number of countries, including neighboring Jordan and Dubai as well as in Italy, France, Russia and China. US government programs are small and incremental, and could be an important area for expansion of ongoing US aid to Iraq.

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Iraq is debating the merits of reorganizing its national oil industry or privatizing parts or all of its oil sector. 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.

The Iraq National Oil Company (INOC) was first established in 1964 to develop the concession areas taken over from international oil companies that had previously controlled Iraq's oil sector. In the early period of nationalization, INOC was granted the exclusive rights by law to develop Iraq's oil reserves and granting new concessions to foreign oil companies was rendered illegal. Iraq realized that it needed to enhance the technical capabilities of INOC and sought assistance from countries that were not involved in the country's colonial history and the consortium Iraq Petroleum Company (IPC), which included the precursor companies to British Petroleum, Royal Dutch Shell, Exxon and Mobil Corporations and CFP of France, and had run Iraq's industry since the British colonial mandate in the 1920s. Iraq concluded a services contract with Entreprise Des Recherches et des Activites Petrolieres (ERAP) of France for technical assistance in Southern Iraq and the offshore. The agreement did not grant any concessionary rights to the French firm.

Iraq signed two major agreements with the Soviet Union in 1969. The agreements obliged the USSR to provide technical assistance for the development of Iraq's national oil industry and to help Iraq bring on line the North Rumaila field which began production with Soviet help by 1972.

The Soviet Union backed Iraq's nationalization and gave it teeth, signing a treaty for mutual military commitments that it would protect the Iraqi government from any possible intervention by a foreign power on behalf of the international oil company interests. Iraq created the Iraqi Oil Company for Oil Operations (ICOO) to take over remaining IPC facilities in Kirkuk. All remaining foreign interests were nationalized by 1975.

The nationalization of IPC areas is a key element of Iraq's revolutionary history and shouldn't be overlooked in thinking about the cultural issues surrounding the industry today. By the 1970s,

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Iraq's Baath party socialist doctrine focused squarely on its revolutionary achievements in wrestling with international capitalist companies and the nationalization became part of the Iraqi psyche for its leadership status in the Arab world. The nationalization of assets was expressed in the context of the Baath doctrine of socialism and Arab unity, and it was stated that the purpose was to use the oil to develop Arab society and to attain other political and ideological goals with regard to the struggle against Israel and the West. The nationalization enhanced the political legitimacy of the Baath regime, which began with a shaky hold on popular support. It also created an export-oriented ideology, allowing the Baghdad regime to reach out to Arab masses beyond its borders and pressure other Arab regimes to follow its revolutionary path of converting Arab oil to use and direct back to Arab peoples instead of to international oil company profits and markets.

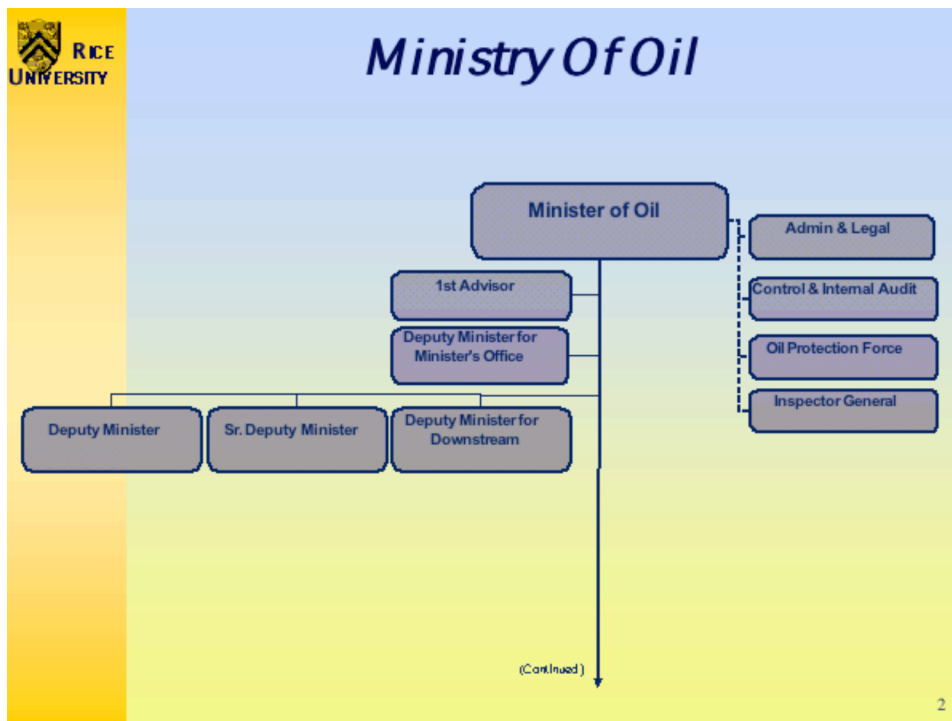
Iraq did, however, briefly continue to deal with foreign oil companies and in 1967, under Act 97, it concluded a series of service contracts with Elf Aquitaine of France (Buzurgan, Abu Ghirab and Fauqi finds) and with Braspetro of Brazil (Majnoon and Nahr Umr).

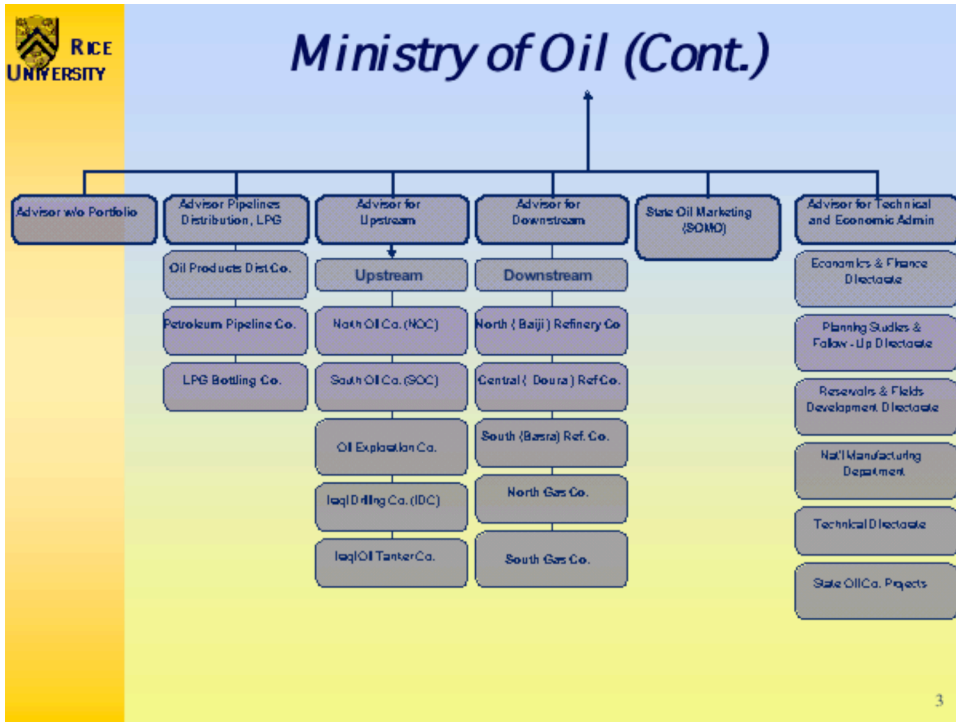
Iraq established a new Ministry of Oil in 1976. The Ministry was commissioned to perform functions of planning and direct construction of petroleum sector infrastructure, and new operating companies were created under INOC. In 1980, the energy sector management structure under the Oil Ministry and the State Organization for Oil Production and Gas Distribution was adjusted to include four new state oil establishments. Then in 1987, a major reorganization of the oil sector took place and INOC became 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 more 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.

Currently, the Iraqi oil industry remains structured around both regional lines and functional duties, generally speaking, based on the 1987 organizational plan. The Oil Minister is the functional head of the industry, with several undersecretaries reporting directly to him. Below this hierarchy are state-run companies functionally defined, each led by a Director General and other senior staff. For all practical purposes, North Oil Company and South Oil Company are run

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as autonomous companies with their own management structures increasingly responding to regional leadership. Key companies have the following responsibilities: North Oil Company is responsible for eight fields in the Kirkuk area, including Kirkuk, Jambur, Bai Hassan, Khabaz, Ajil, East Baghdad, Sufalya, and Naft Khana, and has a staff of 9,400 employees. South Oil Company's main fields are Rumaila, Zubair, Majnoon, West Qurna, and Luhais and it has a staff of 14,200 employees. State Company for Oil Projects is currently managing 75 major projects associated with engineering, contracting and rehabilitation of various oil and gas plants. Iraqi Drilling Co. is located in Baghdad and Kirkuk and specializes in drilling and oil and gas well workovers. It has 18 rigs in operation and employs 4,170 staff. State oil Marketing Company (SOMO) manages sales of crude oil outside Iraq and is in charge of importing oil products.





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Iraq Ministry of Oil has total of 66,500 employees. The number of employees per operating entities consists of the following:

Operating Entity	Number of Employees
North Oil Company	9377
Guard Force (Ertnys)	13400
South Oil Company	14192
South Gas Company	2392
Iraqi Tanker (Truck) Company	1613
Gas Filling Company	3335
Ministry of Oil Headquarters	694
Oil Research and Development Company	206
Iraqi Drilling Company	4132
Oil Pipeline Company	2743
Oil Products Distribution Company	10627
Basrah Institute	176
Oil Exploration Company	1312
North Gas Company	1580
South Refinery Company	3071
Oil Training Institute	561
State Oil Projects Company	2235
North Refinery Company	5163
Middle Refinery Company	2944
State Owned Marketing Company	147

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Existing Iraqi oil production is concentrated in two geographic areas in Northern Iraq in and around Kirkuk and in the South in and around Basrah. The Kirkuk oil field accounts for the vast majority of northern oil production. The practice of oil reinjection at Kirkuk has increased the viscosity of oil in the reservoir, making it more difficult and costly to extract and some damage to the field may be permanent. The second largest northern field is Bai Hassan. Most northern production is exported via pipeline through Turkey.

The most important oil field in Iraq currently is the southern field of Rumaila. Southern oil production in Iraq totals about 1.6 million barrels a day, most of which comes from the Rumaila field. 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 are directed at reversing coning and restoring pressure at the field. 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.

Prior to the US campaign of 2003, the Iraqi oil industry had identified several fields as potential contributors to a production expansion program.

Stage 1 Investment

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+	230	850
North Rumaila/Mishrif+	160	750
Zubair/Mishrif	60	150
Luhais/Suba+	80	200
North Rumaila CG6	60	250
TOTAL	1 million barrels a day	\$4 Billion

+Foreign oil company sought deal under Hussein Regime.

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Stage 2 Major Field Expansions

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
Nassiriyah+	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.
TOTAL	2,820	\$14.4 billion to \$25 billion

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

Iraq has considered several options for reorganizing its oil sector. In the summer of 2004, Iraq's interim government set up a Supreme Oil and Gas Council (SOGC) to formulate the public policy for managing the hydrocarbon resources of the country. The Council was charged with overseeing medium- and long-term plans for the industry, major investments and how they will be financed, foreign contracts, 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.ⁱ

At its first meeting in August 2004, the Supreme Oil and Gas Council (SOGC) proposed the reestablishment of Iraq National Oil Company (INOC) to be structured as an independent holding company with regional subsidiaries. Under this initial proposal, 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 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.ⁱⁱ Proposals also circulated to change the role of the Ministry of Oil to one of

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regulation for the industry. Suggestions have also been circulated to make Iraq's refining companies autonomous from the Oil Ministry or even to privatize them.

Those advocating a state oil company model believe it 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, promoting national unity and the authority of a federal government structure. This option was supported by Iraq's technocratic elite.

However, local sectarian groups are resisting this structure, trying to preserve their direct access to the inflow of oil revenue. The General Union of Oil Employees, which comprise 15,000 workers of the South Oil Company, went on a 24-hour strike in July 2005, 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 Basra, Mohammed Mosbeh Al-Waeli, called for the central government to give a fair share of oil revenues to his region. Statements cited Basra's poverty, high unemployment, damaged sewage system and electricity grid, and limited medical services as key grievances.ⁱⁱⁱ

The ambiguity of the fate of Iraq's oil sector is damaging the country's already tenuous cohesion. Competition over who has the right to sign contracts for the development of new oil and gas assets remains a source of instability and a driver to strife and violence in Iraq, both on a sectarian and geographical basis and within sectarian communities. It is feared that without resolution of this highly contentious issue, national reconciliation will be impossible and the financial stakes driving conflict will override political efforts to bring warring parties and militias to the table for compromise and negotiation of an acceptable national strategy for sustainable national unity under a federalist model.

Due to a series of 11th hour concessions made by Shiite and Kurdish groups to ensure Sunni support for approving the constitution, much about the future of the Iraqi oil industry, the recreation of the Iraq National Oil Co., and the role of foreign oil firms in developing the country's vast untapped oil reserves, has been left to the new parliament to tackle. Iraq's draft constitution appears to leave the door open for semi-autonomous regions taking the lead in

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developing new oil resources, and this ambiguity is fueling sectarian conflict as well as intra-community violence among competing factions for leadership on oil related issues.

Article 108 of the constitution states that “oil and gas are the ownership of all the peoples of Iraq in all the regions and governorates.” This article is interpreted as protecting oil assets as property of the Iraqi nation and therefore implying that all oil policy falls under the jurisdiction of the central government. However, Article 109 tasks the federal government with “the management of oil and gas extracted from *present* fields” while Article 111 proscribes that “all powers not stipulated in the exclusive powers of the federal government belong to the authorities of the regions and governorates that are not organized in a region. With regard to other powers shared between the federal government and the regional government, priority shall be given to the law of the regions and governorates not organized in a region in case of dispute.” This has led to contention over what constitutes a “new” or an “existing” resource, with huge ramifications for the ultimate control of future oil production and revenue. Local authorities are arguing that because the constitution does not specifically mention a federal authority over new oil development, local groups have the right to pursue such developments on their own.

Article 109 reads:

“(a): The federal government, with the producing governorates and regional governments, shall undertake the management of oil and gas extracted from present fields, provided that it distributes its revenues in a fair manner in proportion to the population distribution in all parts of the country, specifying an allotment for a specified period for the damaged regions which were unjustly deprived of them by the former regime, and the regions that were damaged afterwards in a way that ensures balanced development in different areas of the country, and this shall be regulated by a law.”

“(b): The federal government, with the producing regional and governorate governments, shall together formulate the necessary strategic policies to develop the oil and gas wealth in a way that achieves the highest benefit to the Iraqi people using the most advanced techniques of the market principles and encouraging investment.”

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Although the constitution suggests that oil revenues will be shared between the federal government in Baghdad and the different provincial governments, just how they will be shared is still being tackled. Sunni concern over the constitutional rights of the Kurds and Shiites to form self-governing regional authorities has been contributing to the Sunnis' sense of alienation from the Iraqi nation-building process and driving continued support for the already effective insurgency, which continues to disrupt Iraqi oil operations and make investment in Iraq's petroleum industry even less attractive to foreign oil companies.

To many Sunnis, a weak central government that gives significant autonomy to the regional ethnic provinces could lead to "balkanization," including the territorial plundering of oil.

The distribution of oil and gas resources across Iraq is not uniform, undermining the case that individual regional development and localized retention of oil revenues can meet the constitution's requirement that oil development will "benefit all the peoples of Iraq."

The issue of oil revenue splits is a thorny one, with activism and violence evident at the local level reflecting disagreements over the dispensation of ongoing oil revenues as well over tense conflict over who should control new oil field investments and the new revenue from such investments. Sunni Arab leaders have opposed the idea of any regional autonomy for oil development and control of local oil revenues because such an outcome would leave them disadvantaged since most of the country's oil wealth is concentrated in the Shiite southern areas and to a lesser extent in and around Kirkuk in the North. The largest potential oil fields are located in various areas of southern Iraq. Uncertainty about who will control revenue generated from that oil is also leading to conflicts among differing Shia groups in the region over ultimate control of these assets.

It is unclear which, if any, oil assets would remain in the control of the Sunni minority in Iraq or of the central province, which will include Baghdad. Only the East Baghdad field is located near the capital city. The Kurdish Regional Government claims control of the Kirkuk field which it says falls under "disputed territories." The imbalance between prolific oil resources in Shia and to a lesser extent, Kurdish-held areas, versus sparse resources in Sunni areas could prove

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problematic in attaining Sunni buy-in to a new federalist system in Iraq. As Marina Ottaway notes in a policy brief on the Iraqi constitution, “the Sunnis would have to be assured of a reasonable share of oil revenue to accept a federal solution and set up their own region, but the constitution does not provide such assurance.”^{iv}

Iraq's sparsely populated Western Desert is also believed to hold extensive unexplored resources, leaving other questions about whether the few clans in the region will be allowed to exploit such a bonanza on their own or whether other groups can assert the right to annex these areas.

Kurdish leaders have been particularly aggressive in asserting independent control of their oil assets. Kurdish leaders sent a letter to US President George W. Bush in June 2004 requesting 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...”^v

More recently, the Kurdish Regional Government (KRG) has started to sign contracts with foreign companies and has passed a law inside its territory asserting that any oil and gas revenues from these new deals would stay in its own province.^{vi} The KRG draft petroleum law—according to supporting memorandums—is aimed to “reflect and implement the extent of Kurdistan's constitutional right to control petroleum development in its territory.”^{vii} The KRG draft law asserts Kurdistan's constitutional right to directly receive revenue from future fields but also claims a right to retain a share of revenues from existing fields “unless there is an agreement in place with the government of Iraq under which Kurdistan receives a proportionate share of revenues and compensation for damage and denial of petroleum revenues by the former regime.”

The KRG draft law defines existing fields as a field that is producing an average of 20,000 b/d over any 12-month period prior to August 22, 2005. This definition would exclude all fields currently in the defined territory of the KRG. Later in the draft, in articles 3 and 4, the KRG lays claim to be the “sole authority” in respect to oil operations in Kurdistan and “disputed territories,” which it notes includes the Kirkuk oil field. The KRG draft oil law commits to coordination with the federal government on issues related to OPEC production quotas and

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apportioning of revenues “provided that those institutions (federal ministries) have regional representation and unanimous decision-making protocols.”^{viii} However, the flexibility for the KRG to operate independently of the Iraqi Oil Ministry will be limited by its need for access to transportation and export infrastructure. The Iraqi Ministry of Oil is telling companies that it must be involved in negotiations and approval of any oil deals.

The KRG draft oil law also paves the way for production-sharing agreements (PSA) with international oil companies. Many of the prospects inside Kurdish territory are considered to be poor quality in terms of recoverable resources. Still, despite the geologic, political and legal risk, several small international firms have signed agreements with the KRG. Norway's DNO has already drilled a well under a PSA agreement with the KRG. Heritage Oil has a memorandum of understanding studying several fields in the Irbil-Mosul area near the Taq Taq field while Canada's Western Oil Sands subsidiary, Western Zagros, has a PSA with the KRG for a block in the Zagros fold belt. Prime Natural Resources, Petoil of Turkey, and Oil Search of Papua New Guinea have taken stakes in the Bina Bawi field.

Shi'a politicians and individual leaders from the Anbar province are actively pursuing oil investment contracts with foreign companies for development activity in the South and West. A regional Arab oil company is pursuing a memorandum of understanding for the Kifl oil field in Najaf, and various parties are pursuing the support of Abdel Aziz al-Hakim and other Shia leaders for consideration of development of other important fields in southern Iraq. Iraqi politician Ahmad Chalabi has also allegedly been pursuing oil development deals with international companies.

Iraq's main political factions have made some progress hammering out an oil revenue sharing agreement and national oil law that would give the central government more power over the oil sector and determine how to distribute current and future oil revenues. A draft agreement is currently being worked on by a committee of politicians and cabinet ministers from the main Shiite, Sunni and Kurdish blocs in government. The draft would then go to the Iraqi cabinet and Parliament for approval.

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The working draft of the oil law would reestablish the state-run Iraq National Oil Company (INOC) that would take overall charge of oil and gas fields and operate under a corporatized structure, rather than through a government budget process. Regional companies like the North and South Oil Companies, which would serve as operating companies, would fall under the INOC umbrella, with exports still sold solely by the state marketing company SOMO. The draft law would also set a minimum production threshold to create any new oil companies. There appears to be movement toward an oil revenue sharing agreement under which the central government will collect oil revenues and distribute them back to the regions on the basis of population.

However, so far, the question of who gets any oil exploration-signing bonuses and who can actually negotiate future deals under what authority remains problematic. One compromise being circulated is the formation of a Higher Petroleum Council—representing all factions—that would issue exploration licenses with an eye to ensure the highest revenue for the country as a whole and make sure that no one region dominated the process of letting new fields. Some factions are still fighting to retain the regional authority for final approval of future oil field contracts and are resisting central government control over the process of future oil development. Some regions want to be the master of when and what fields can be developed in their own domains and to have the authority to sign their own deals, presumably to participate directly in the profits of such dealmaking.

It is unclear what, if any, role the US government is playing in guiding the deliberations on this latest breakthrough on the oil laws. This is clearly an area where the United States is in a position to provide both technical assistance and its services as an honest broker, should the negotiations process break down.

Given the investment needs of Iraq's oil sector, which is in even more disarray and disrepair now than before the US-led campaign, the question of how to raise such sums will have to be addressed. It is likely to take between \$5bn and \$10bn to get Iraq's production capacity back to pre-war levels and an additional \$15–25bn to raise output to the 5m b/d range.^{ix} Lack of definition for how prospective outside investors will participate in the sector could potentially

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widen the prospects for corruption and profiteering and increase acrimony among political factions vying for power inside Iraq.

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 and approval of a final Iraqi petroleum law and the development of political institutions and court systems will have tremendous implications for the health of the oil sector. 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 define the role of national oil company entities in the oil industry's restructuring. The ability of Iraq to attract outside funds for capacity expansion and oil field development will be dependent on its ability to establish well-defined, legally authorized roles for various state oil sector institutions and provincial authorities.

In the past, state-owned entities were responsible for the production and development of virtually all of Iraq's oil and gas. Iraq's prior strategy 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 average oil prices of \$35 a barrel, financing future capacity expansion out of current cash flow would take about \$3 billion annually or about 10% of the government's share of oil proceeds. A more ambitious expansion program might be possible under higher oil price scenarios.

Achieving higher levels of output through self-financing, though possible, will present a number of tough and potentially controversial, hard to implement 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 activities promoting oil sector transparency and best practices. Whatever strategies and options are chosen for the oil sector, 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.

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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 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—several billion just to restore oil production and more than \$20 billion to raise output to the 5 million b/d range—the question of how to raise such sums has to be addressed. If it is decided that higher levels of production are desired, it is inevitable that the potential role of outside investors and lenders will loom large.

If a role is indeed envisaged for outside investors and lenders, then that in turn will necessarily influence the restructuring policies and implementation measures required. Self-financing may be less onerous in terms of required reorganization of the sector and its legal environment but many countries that have chosen to self-finance and kept 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 entities in the oil industry's restructuring.

Improved national oil company management will have to serve as a basis for any program to expand production. Issues related to the role of the existing oil company subsidiaries such as South Oil Company and North Oil Company 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 as a whole, additional costs and non-core responsibilities that might be imposed on the emerging new Iraqi

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oil institutions would affect their profitability and ability to build core functions of oil production capacity management and expansion.

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 clearly defined, mandated roles for various state 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/or governance have been able to overcome their risk profile and pull in massive injections of capital 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).

The consequences of Iraq's decisions about the future organization of its oil sector 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

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base, the manner of Iraq's participation in oil markets will be a major factor 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 allow foreign direct investment or to privatize its oil sector, fostering increased competition among domestic operations inside the country's oil sector, the consequences are likely to lead to more competitive structures for global oil markets in general and thereby lower energy prices over time.

ⁱ "Iraq Establishes Supreme Oil and Gas Council" Middle East Economic Survey (MEES) 47:29 A3 July 19 2004

ⁱⁱ "Iraq to Establish National Oil Company" MEES 47:35 August 30, 2004 A4

ⁱⁱⁱ "Oil Workers in Southern Iraq Demand Bigger Share of Income from Exports", *International Oil Daily*, 19 July 2005.

^{iv} Marina Ottaway, "Back from the Brink: A Strategy for Iraq", Carnegie Endowment Policy Brief, No. 43, November 2005.

^v "Iraqi Kurds Demand Right to Own and Manage Northern Oil Reserves" MEES 47:24 June 14 2004 A4

^{vi} "Kurdish Draft Oil Law Demonstrates Strident Political Ambitions In Months Ahead" MEES 49/36, September 4, 2006, p. A1-3

^{vii} Ibid

^{viii} Ibid

^{ix} Author's estimates based on interviews with senior officials from Iraq's oil industry.