

IRAQ'S PETROLEUM DEVELOPMENT

– Fiscal Issues –

A Study by the International Tax and Investment Centre

Washington 2004

Executive Summary of the Report: Sections 1 to 4

1. Introduction

In June 2003 ITIC formed a small expert group to assist companies and IFI's in their work relating to the restructuring of Iraq's petroleum sector. ITIC has drawn on its experience and that of its partners of aiding companies, IFI's and host governments in the FSU and elsewhere in making far-reaching changes to the institutional structures affecting the development of petroleum resources.

The expert team assembled comprised representatives from the Centre for Global Energy Studies (CGES), Oxford Economic Forecasting (OEF), Transborder and ITIC (International Tax and Investment Centre). A list of the specialists involved is provided in Annex 1.

The study has been designed to clarify the minimum conditions required to permit Foreign Direct Investment (FDI) to occur. Scenarios were used to explore the effects of low and high production rates and two oil price scenarios up to 2010. Rather than create four scenarios, the higher oil price scenario was only applied to the higher output case.

This note summarises the work done. It summarises the possible development of Iraq's oil sector, its investment needs and likely costs and revenues. The impact of these variations is then measured via a macro economic model of the Iraqi economy. Though the models can quantify the possible range of outcomes, decisions need to be taken on the legal and fiscal legislation to be put in place. Hence the report is then focused on the alternative legal and fiscal arrangements available to both the state and investors. Finally, suggestions are made as to what may prove to be viable possibilities, within the wider context of possible institutional reform.

2. Iraq's Petroleum – Problems and Opportunities

In its latest report on Iraq (of October 2003), the International Monetary Fund (IMF) stresses its concern over the level of debt currently borne by Iraq. The Fund argues that the full amount may exceed \$120.0bn (estimates vary in the \$80-130bn range) and that unless measures are taken to ease this debt burden, it will severely hamper Iraq's economic recovery and development.

Even assuming that there will be a substantial degree of debt forgiveness, any remaining debt will need to be serviced and eventually repaid. Opportunities to raise development funds through new borrowing are thus very limited. The potential to raise revenues by broadening the tax base is also limited and even the muted tax on imports has been postponed. The only reliable sources of funds will be further aid flows (limited) and export revenues from oil, making FDI led expansion of the oil sector an especially valuable means of boosting the anticipated economic recovery.

To assess the opportunities provided by oil developments, the study examines the costs and likely revenues from two alternative production scenarios. In the low case output rises only to 3.5mn b/d by 2010. In the high case, production reaches 4.8mn b/d by 2010 as a result of Foreign Direct Investment (FDI). The results are also tested using a low and a high oil price assumption: either oil prices decline to \$17.7/bbl by 2010 or they remain stable at \$22.7/bbl. Detailed tabular materials have been prepared to provide the background to the reserves, investment and operating cost estimates (Annex 2).

Based on these assumptions the impact of the oil sector on Iraq's wider economy has been assessed. The impact on GDP of additional oil revenues is marked: for each extra \$1 of oil sales, GDP is estimated to rise by about \$2. This is not due to job creation in the oil sector per se but because the extra oil revenues are translated into reconstruction efforts, new jobs and development of other parts of the Iraqi economy. Growth in other sectors is very important, but it needs the export revenues provided by oil to be sustainable. The additional revenues resulting from FDI led expansion of the sector are thus critical, especially because Iraq's external debt obligations make it imperative that much of the petroleum investment needed is financed from sources other than those that would be recorded as official debt.

Broad indications are provided as to the scale of the cash flows to be shared between the Iraqi state and overseas investors. In the low production case, no inward investment is assumed. In the best case (high production with the higher price), the total cash flow available to both parties by 2010 is estimated at \$32.0bn. Payments to investors (for example via cost oil provisions in Production Sharing Contracts) amount to approximately 12% of the total in 2010, but this share changes markedly with time and will depend upon the precise terms of agreements in force (Annex 3).

Though macro-economic modelling can give an idea of the scale of returns available to be shared between the host government and International Oil Companies (IOC's), there is a wide range of alternative approaches available to the Iraqi government. The report examines these various alternatives in some depth. Based on the analysis by Transborder (Annex 4), with comments from several oil and service companies, an appropriate regime for Iraq is suggested.

3. The Legal and Fiscal Framework

The conditions required for FDI can be grouped under two main headings: legal and fiscal. Transborder describes what these comprise in detail in Annex 4. The fiscal section of the Annex provides a menu of alternatives that may be considered by Iraqi officials in developing a legal and fiscal framework for the petroleum sector.

Legal issues

Currently, any company contemplating a major investment would have to recognise that there could be no guarantee that legal rights granted by the current minister would survive when an "internationally recognised representative government" assumes the responsibilities of the CPA.

The adoption of a new constitution should also make clearer certain key conditions. For example, will state ownership of reserves in the ground be asserted in the constitution itself, or, as is more common, in separate legislation? Title to petroleum in the ground, though likely to feature in constitutional discussions, might not be a controversial issue for the constitution makers if it were not for its necessary connection with the next point, the much more critical issue of devolution.

In simple terms there may have to be a choice in the first instance between a federal and a unitary state, or if Kurdish aspirations for autonomy through the Kurdistan Regional Government are seen as a special case, there could perhaps be some halfway house or alternative model.

If a federal or quasi-federal pattern emerges it would still be necessary to agree how, in the distribution of legislative powers, title to and disposition of petroleum resources would be allocated. Whether the end result is federal, unitary or somewhere between, the taxation of revenue from petroleum operations and the charging and receipt of royalty payments will also need to be considered, and those matters will of course be of vital concern to prospective investors.

Until the above issues and also those relating to agreements concluded by the Saddam regime have been settled with some degree of finality, large-scale investment in the petroleum sector is unlikely. In the interim companies can prepare for entry into the country by supporting the creation of an updated inventory of petroleum resources, an assessment of environmental issues and by assisting the Iraqi authorities create a caucus of legal and fiscal arrangements that reflect international best practice in the oil and gas industry.

Fiscal Issues

Iraq's oil, and probable future gas, fields are very large and capable of development and operation at very low cost. As such they will generate substantial resource rents that can be used to generate substantial returns to the state. The issue is how can this best be achieved so as to make the country both attractive to foreign investors and competitive on a country-by-country comparison. The tax system needs to be designed so that it does not distort investment decisions, reflects investors' desired rates of return at appropriate risk adjusted rates and is likely to be stable.

For petroleum investors the overall fiscal structure and burden are more important than the particular tax and production sharing instruments chosen. Provided that due attention is paid to considerations of foreign tax credits in the home tax jurisdiction of the investor, a production-sharing agreement can be designed to have equivalent fiscal effect to a tax and royalty system. Similarly, individual devices for state participation (working interests, carried interests, free equity) each have a fiscal effect and an equivalent tax measure can, in principle, be designed. The choice among the type of fiscal system therefore depends essentially on non-financial considerations.

In current conditions in Iraq, with much general legislation needed and a functioning court system at best rudimentary, the incorporation of the above principles in a body of laws (such as is typically the case in OECD countries with the associated dispute resolution procedures) is not likely in the near future. Accordingly the principles noted will have to be incorporated in Production Sharing Contracts or Agreements. (PSC's or PSA's).

To ease administrative burdens associated with the case-by-case negotiation (and subsequent execution) of individual field or licence PSA's, a popular halfway house involves using a model production sharing agreement with a fixed income tax regime in a bidding round for particular petroleum prospects. This is likely to be the most practicable arrangement in Iraq for a significant period.

Various forms of PSA could be used in Iraq. The two main contenders are (a) production sharing triggered by the contractor's achieved rate of return and (b) production sharing triggered along a progressive scale for the payback ratio or "R Factor". The comparative merits of these two alternatives are examined in more detail in Annex 4. Option (a) is probably the most useful for Iraq.

4. The Wider Context

Iraq – Revitalising the petroleum Sector

1) Introduction

In June 2003 ITIC formed a small expert group to assist companies and IFI's in their work relating to the restructuring of Iraq's petroleum sector. ITIC has drawn on its experience and that of its partners of aiding companies, IFI's and host governments in the FSU and elsewhere in making far-reaching changes to the institutional structures affecting the development of petroleum resources.

The expert team comprised representatives from the Centre for Global Energy Studies (CGES), Oxford Economic Forecasting (OEF), Transborder and ITIC (International Tax and Investment Centre). A list of the specialists involved is provided in Annex 1.

The study assesses what will be required to enable Iraq's petroleum sector develop after years of being affected by sanctions and war. The report concentrates on the minimum conditions required to permit Foreign Direct Investment (FDI) to occur. It sets out what may best fulfil the fiscal requirements of the new government and investors, both oil companies and their contractors. Due regard has been paid to the developing legal status of Iraq as sanctions legislation is modified.

This part of the work has been financed primarily by private sector donations, principally from oil and service companies without whose involvement the swift rebuilding of Iraq's petroleum sector will be more difficult.

2) Current conditions and future expenditure needs

a. Debt and Debt Service

Iraq's economy is currently in an extremely weak condition. Years of sanctions and the misallocation by the Baathist regime of income that was created¹ have burdened Iraq with massive external debts and so weakened the agricultural sector that substantial food imports are still required. Debt service, imports of food and the acquisition of materials and services for reconstruction (of infrastructure as well as the petroleum industry) are the most important issues to be faced by a new administration.

Estimates of Iraq's debt obligations vary widely, depending upon what is included. CGES suggests a middle view, as in Table 1.

Table 1 - Estimates of Iraq's debt obligations

	\$Bn
Exotix	79.0
Iraqi Government's submission to UN (29/4/91)	89.1
US Centre for Strategic Studies	108.6
World Bank/Bank of International Settlements	127.7
CGES estimate	90.0

¹ Since 1968, oil worth \$580bn (in constant 2002 US dollars) has been produced in Iraq, around \$26,000 for every man, woman and child, yet the country has little to show for all this wealth. (CGES)

Though this study has concentrated on fiscal concerns affecting the potential for oil and gas development in Iraq, fiscal issues are perhaps one of several major elements relevant to the reform or liberalisation of the upstream oil and gas industry. In a study by the World Energy Council, six components are identified: Control; Operating Framework; Privatisation; Pricing and Sales; Trade Restrictions, and the Fiscal Framework. We have used this conceptual framework to suggest how Iraq's industry may, perhaps should, develop in the coming years.

Until now the Iraqi oil industry has been state-owned (A). The previous government had already been signed a limited number of PSC's, and had stated that it planned to offer up to 25 new fields to foreign companies, many of them under a PSC. In addition to the new field development projects, Iraq also intended to offer service contracts for provision of technology for eight producing fields (E). A series of economic reforms was introduced in 1987 and efforts were made to privatise some state assets. This attempt to liberalise the economy came to an abrupt end with the invasion of Kuwait (A). Given the imposition of UN sanctions, pricing and sales were controlled by the UN – hence the n/a classification, here and for Trade Restrictions. Finally, there was no specific fiscal regime for the industry as all profits were state property (C).

Country	Control	Operating Framework	Privatisation	Pricing and Sales	Trade Restrictions	Fiscal Framework
Angola	A	E	A	C	D	A
Egypt	D	E	A	A	C	A
Iran	A	E	A	B	D	C
Saudi Arabia	A	E	A	B/C	D	C
Iraq	A	E	A	n/a	n/a	C
Iraq (new?)	D	E	B	C	D	A

In looking to the future, though there is pressure to privatise the whole industry, the judgement taken here is that the most likely medium term outcome will be a possibly mixed outcome, whereby there is one or more state companies working in combination with foreign entities. This results in mixed control (D) and operating frameworks (E). The downstream could be privatised (B), with these companies perhaps able to participate in the upstream. For pricing, sales and trade there should be no restrictions (C). Finally a specific fiscal framework needs to be developed (A), most probably using ROR PSA terms.

To summarise the 'coding' introduced in the section:

A = ??????

B = ?????? etc etc (ie I THINK THIS NEEDS A POINT FORM OVERVIEW)

In this context of changes to control, ownership, financial and fiscal systems, Iraq's economy should be free of the economic and political fetters imposed under Saddam. The unanswered question today is how rapidly parts of the population will come to recognise the benefits that await the country when sabotage and murder cease.

IRAQ'S PETROLEUM DEVELOPMENT

- Fiscal Issues -

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If, after negotiations, Iraqi debt due to be repaid does indeed total some \$90 bn, then even at a 3.5% real interest rate, annual interest payments may exceed \$3bn. Repaying the capital over 25 - 30 years could create an additional annual burden of perhaps \$3-\$4 bn, implying total capital and interest repayments in the early years of around \$6.0 bn per annum.

To this element of the capital account has to be added the cost of reconstruction, most of which will involve the import of goods and services. With the reconstruction of the electricity sector alone estimated to be about \$10 bn, total reconstruction expenditures are put at between \$2.0 and \$2.5 bn p.a. CGES summarise their assessment of these costs in Table 2.

Table 2
Annual costs to Iraq of handling its international debt, reconstructing its infrastructure

	\$bn
Debt servicing	2.3
Debt repayment	3.0
Reconstruction	2.3
Total of items above	7.6

b. Food Imports etc.

To this annual outflow of financial and infrastructure reconstruction charges must be added the costs of maintaining life and welfare among the population while agriculture and local services have been restored and a functioning economy emerges.

QUESTION ON THE STATEMENT OVER THE UN MONEY: THE DATA POINT TO IMPORTS TOTALS OF JUST \$8-12bn MAX IN THE 1999-2002 PERIOD – so 'food and essential imports' cannot be as much as \$15bn (was this the 'available plan' rather the spent plan? Or does \$15bn incl the reparation payments agreed as well as import costs?)

Under the UN's oil-for-aid programme Iraq received \$15.5bn annually and it is this amount that needs to be added, as a bare minimum (for it represents a meagre \$1.70 per person per day), to Iraq's annual debt servicing and repayment and basic investment requirements. Iraq thus needs minimum export earnings of \$20-25 bn p.a. simply to maintain the status quo.

c. Oil – Reconstruction and New Developments (see Annex 2 for details).

Reconstruction of Iraq's petroleum sector extends beyond the rehabilitation of existing oil fields. Refineries, pipelines and support and service facilities all need extensive rehabilitation to minimise future dependency on imports of oil product and goods and services required for ongoing operations and maintenance, as well as to allow oil produced to be exported via both northern and southern routes.

"Downstream" Requirements

CGES has estimated that rehabilitating the "downstream" part of Iraq's oil industry may require a total investment of \$5.0-6.0 bn, broken down as shown in Table 3.

Table 3 – "Downstream" Investment needs

Refineries	\$bn
Rehabilitation	0.2
Upgrading	2.5
Pipelines, Storage and Loading	2.0
Drilling & related facilities and equipment (ca 60% damaged)	1.0
Approximate total	5.7

This suggests that the annual expenditures on the rehabilitation, expansion and modernisation of the downstream sector of Iraq's petroleum industry will require about \$1.0 bn per annum. Investments in drilling services and logistics are essential for the success of investment in the rehabilitation and expansion of producing and new oilfields. (I THINK WE HAVE OIL OUTPUT AT 3.5bbl FROM 2006 SO DOESN'T THIS MEAN THE ABOVE COSTS MUST BE BORNE IN 2004-2005 ??? And then there will be annual maintenance from 2006 on for the upkeep just of 3.5bbl)

"Upstream" Needs

Existing Fields

Despite present difficulties, Iraq's existing oilfields have the potential to produce at greater rates than recently recorded (Table 4).

Table 4 - Iraq's Oil Production by Major Fields

1,000 b/d	1980	1990	2000	2002
NORTHERN FIELDS				
KIRKUK	1,370	840	850	700
BAI HASSAN	34	150	90	90
KHABBAZ			22	25
Other fields	70	68	66	66
Sub-total	1,474	1,058	1,028	881
SOUTHERN FIELDS				
S.RUMAILA	777	500	900	640
N.RUMAILA	82	300	320	200
ZUBAIR	69	140	70	70
Other fields			120	120
Sub-total	932	940	1,410	1,030
Other fields	6	15	33	37
Grand Total	2,412	2,013	2,471	1,948

The Iraq Ministry of Energy has put current production capacity at producing fields at 2.8mn b/d.² However, with investment, production capacity in existing fields is thought to be capable of expansion to 3.5mn b/d. The investment required to rehabilitate existing fields so as permit this figure to be achieved is estimated at \$2.0 - \$3.0bn, excluding the investment in logistical support noted above under "Downstream".

Undeveloped Reservoirs and New Fields

² Ghadhban MEES 27.10.03

Earlier estimates by the Ministry of Oil indicated that production from producing fields would decline to 2-2.5 mbpd in the coming years – approximately 10% below current capacity, or 30% below the expanded figure. This decline can be offset by additional production capacity of 4.7 mbpd from development work in 33 fields.

In eight producing fields, new development work has to be carried out on their undeveloped reservoirs to provide extra production capacity of 0.9 mbpd. In a further twenty-five fields appraisal is complete, but new development work has to be carried out to provide an aggregate production capacity of 3.8 mbpd.

An investment of around \$21 bn will be needed for development work in the above mentioned 33 fields to achieve 4.7 mbpd. Coupled with the production from old fields, after a decade of activity, Iraq's oil production capacity might reach 6.5 – 7.0mn b/d. Of this amount the original plan drawn up by the Ministry of Oil foresaw 2.5mn b/d being produced in cooperation with foreign oil companies, with up to 4.5mn b/d by the Ministry.

In addition to the \$21-\$24bn of capital expenditure required to refurbish and develop Iraq's crude oil production capacities over the next ten years, there will be an ongoing need for spending on exploration and day to day operations as outlined in section C above, for which costs are expected to amount to approximately \$1.0bn per annum. (I ASSUME THIS REFERS TO SECTION C ?? but better to be explicit? This may even benefit from a final summary table?)

d. Financial flows summary (OEF Modelling): need for FDI

The above expenditures have to be financed. Though there are some funds available to the new government from existing reserves and aid monies, most spending, whether on general import requirements (which are substantial) or on specific oil sector expansion and maintenance costs, will need to be financed from export revenues, i.e. from oil sales.

**Table 5 - Medium Term Spending Needs of Iraq
(\$bn p.a. – 10 year averages)**

Debt servicing	2.3
Debt repayment	3.0
Reconstruction	2.3
Food and welfare imports	15.5
Refineries	Rehabilitation 0.0
	Upgrading 0.3
Pipelines, Storage and Loading	0.2
Drilling & related facilities and equipment (ca 60% damaged)	0.1
Capital spending on existing and new oilfields	3.5
Annual total	27.2

All forward projections are highly uncertain, but it looks likely that the funding needs of Iraq, before aid or drawdown of assets, may easily reach a minimum of \$25.0bn p.a., which is approximately equivalent to the revenue from oil sales of 3mbd at \$22-23pb (before deduction of operating costs).

The table that follows summarises the funds thought to be available to the Iraqi authorities as at mid 2003.

Table 6 - Funds available to Iraq for disbursement in 2003 and beyond

	\$bn
Accumulated funds under UN oil-for-food program.	11.1
Iraqi funds frozen by US in 1990 under sanctions	1.5
Iraqi funds frozen by other countries since 1990	1.1
Recently identified Iraqi funds that are available	1.2
Aid to Iraq approved by the US Congress	2.4
TOTAL	17.3

Source: MEES, 2nd June 2003, page B6

WHAT ABOUT A FOOTNOTE ON THE LAST US PACKAGE FOR IRAQ AID THAT IS SUPPOSED TO BE \$20bn ?? although I agree its not clear on what basis this money will be disbursed!

Even with substantial additional aid from the USA, the EU, Japan and other donors, on an annual basis over a ten-year time horizon these funds perhaps amount to only some 10% of Iraq's annual financing needs. Income from oil exports, and at some future date, possibly gas, is needed quickly and in growing amounts after 2004 in order to permit debt servicing and repayment to resume. The following table, summarised from OEF modelling runs, explores the possible cumulative development of Iraq's income from exports and of its import and repayment needs. Details of the scenarios are included in Annex 3.

Table 7 - Current Account Trends – Iraq 2003-2010

Iraq Low and High Case Current Account Estimates		
US\$bn	Low	High
Oil export revenues	147.3	202.8
Other export revenues	1.2	1.2
Imports of goods	-137.0	-178.9
Net imports of services	-7.8	-9.7
Net foreign aid income	10.2	10.2
Transfers to foreign investors*	0.0	-7.2
Other transfers	-10.6	-10.6
Current account	3.3	7.9

Since the Iraqi debt burden will remain substantial for a number of years, it seems unlikely that international lenders will be prepared to see official debt increase further so as to finance the rehabilitation of existing oilfields and the development of new ones. Direct investment by international oil companies would foster a faster rate of development. The above table includes in its higher case, payments to international oil companies (marked by *) as a result of earlier inward investments.

The bases for these estimates are the data prepared by CGES and other specific estimates prepared by OEF. The impact may be summarised as follows:-

Table 8 - Iraq's Oil Sector: 2003-2010

Cumulative spending on operations, maintenance and capital

Cumulative US\$bn	Low case	High case	Differences
Maintenance and operations	18.9	21.7	2.8
New Developments	7.1	18.4	11.3
Totals	26.0	40.1	14.1

The differences between the two cases relate to the assumption in the high case that annual oil production can be raised as a result of foreign direct investment (FDI). Costs are assumed to be largely insensitive to changes in oil prices. The high case used in the table assumes oil prices remaining at \$22/bbl. Thus the transfers to foreign investors shown in the current account table are the result of agreements entered into by foreign investors and represent the partial payment of costs incurred, including in a few cases perhaps some return on capital by 2010.

OEF's estimates include figures for the aggregate oil surpluses that may arise under different scenarios. In the low case, no inward foreign investment into the oil sector is assumed. In the high cases (distinguished by two variants on the international oil price), direct investment is assumed to help pay for expansion. The payments rise over time to between 16% and 10% of the gross oil surplus generated within the economy.³

The impact on GDP of additional oil revenues is marked: for each extra \$1 of oil sales, GDP is estimated to rise by about \$2. This is not due to job creation in the oil sector per se but because the extra oil revenues are translated into reconstruction efforts, new jobs and development of other parts of the Iraqi economy. Growth in other sectors is very important, but it needs the export revenues provided by oil to be sustainable. The additional development funding resulting from FDI in the sector is therefore helpful in meeting the expansion costs and critical for avoiding any additional build up of foreign debt. But what are the minimum conditions for such investment?

3) Minimum Conditions for Foreign Direct Investment in Petroleum Sector

The conditions required for FDI can be grouped under two main headings: legal and fiscal. Transborder has described what these comprise in detail in Annex 4. The fiscal section of the Annex provides a menu of alternatives that may be considered by Iraqi officials in developing a legal and fiscal framework for the petroleum sector. This section summarises Transborder's extensive review and draws some conclusions as to a possible "preferred" solution.

a) Legal Framework

In Iraq of today, the situation is not altogether different from the situation confronting the international petroleum industry with break up of the Soviet Union. In that case there was a transformation of a single state monopoly into a number of separate systems all of which were, in some degree, open to market forces and ready, indeed anxious, to encourage foreign investment. The difference, of course, is that in the Soviet case the context was benign and optimistic; in the case of Iraq

³ See pages [redacted] of Annex 3 for more detail.

it may well be controversial and is certainly complicated by a number of unsettled questions about the application of the rules of public international law.

A realistic appreciation of the economic difficulties now facing Iraq requires an understanding of how much needs to be done before there can be any prospect of establishing a stable and hospitable regime for large scale investment in the petroleum sector. In an objective review the starting point has to be a number of issues of constitutional significance.

Currently, any company contemplating a major investment would have to recognise that there could be no guarantee that the rights granted by the minister would survive when an "internationally recognised representative government" assumes the responsibilities of the CPA. However, the acceleration in the timetable for the appointment of an internationally recognised government means that this issue may become clearer after mid 2004.

The adoption of a new constitution should also make clearer certain key conditions. For example, will state ownership of reserves in the ground be asserted in the constitution itself, or, as is more common, in separate legislation? Such legislation authorises the grant of petroleum rights and may include provision for the establishment of a national oil company.

Title to petroleum in the ground, though likely to feature in constitutional discussions, might not be a controversial issue for the constitution makers if it were not for its necessary connection with the next point, the much more critical issue of devolution.

In simple terms there may have to be a choice in the first instance between a federal and a unitary state, or if Kurdish aspirations for autonomy through the Kurdistan Regional Government are seen as a special case, there could perhaps be some halfway house or alternative model.

If a federal or quasi-federal pattern emerges it would still be necessary to agree how, in the distribution of legislative powers, title to and disposition of petroleum resources would be allocated. Whether the end result is federal, unitary or somewhere between, the taxation of revenue from petroleum operations and the charging and receipt of royalty payments will also need to be considered, and those matters will of course be of vital concern to prospective investors.

Until the above issues and also those relating to agreements concluded by the Saddam regime have been settled with some degree of finality, large-scale investment in the petroleum sector is unlikely. In the interim companies can prepare for entry into the country by supporting the creation of an updated inventory of petroleum resources, an assessment of environmental issues and by assisting the Iraqi authorities create a caucus of legal and fiscal arrangements that reflect international best practice in the oil and gas industry.

b) Fiscal Framework (see Annex 4 for more detailed review)

General

For petroleum investors the overall fiscal structure and burden are more important than the particular tax and production sharing instruments chosen.

Provided that due attention is paid to considerations of foreign tax credits in the home tax jurisdiction of the investor, a production-sharing agreement can be designed to have equivalent fiscal effect to a tax and royalty system. Similarly, individual devices for state participation (working interests, carried interests, free equity) each have a fiscal effect and an equivalent tax measure can, in principle, be designed. The choice among the type of fiscal system therefore depends essentially on non-financial considerations.

Information on the petroleum fiscal regimes of virtually all jurisdictions in the world is widely available from commercial and published sources. Not all this information, however, is easy to interpret because the interaction between petroleum-specific terms and the elements of the general tax system that may apply is often unclear from these sources. Furthermore, while fiscal regimes can be compared for their impact on a particular field example or exploration play, such a comparison does not take account of industry perceptions of the relative prospectivity of a particular area, of cost and infrastructure differences or of political risk assessments. Although a fiscal system should not move far out of line with that in another area of comparable prospectivity, an assessment of what is appropriate really requires "market-testing" to see if it is robust. This can be done via bidding rounds or in negotiations over a particular prospect.

Underlying Economic Issues

Iraq's oil, and probable future gas, fields are very large and capable of development and operation at very low cost. As such they will generate substantial resource rents that can be used to generate substantial returns to the state. The issue is how can this best be achieved so as to make the country both attractive to foreign investors and competitive on a country-by-country comparison. The tax system needs to be designed so that it does not distort investment decisions, reflects investors' desired rates of return at appropriate risk adjusted rates and is likely to be stable.

Given the volatility inherent in oil prices, and the tendency for licences and agreements to last for many years, both investors and the state need to create agreements that offer some stability of returns to both parties. Exposure to instability can best be achieved by building into fiscal terms devices that respond automatically to unexpected or changed circumstances in costs and prices. Simple legal undertakings may be subject to challenge by sovereign governments, as has recently been seen in Kazakhstan.

Any regime also needs to be sensitive to the costs of unsuccessful exploration if the regime is to continue to attract investors.

Designing a Balanced Petroleum Fiscal System in Iraq.

Three important principles derived from the economic arguments should inform Iraq's approach to the design of a petroleum fiscal regime:

- first, the fiscal regime for petroleum cannot move too far out of line with that prevailing in countries with similar prospectivity, or else investment will be diverted;
- second, if the government carefully structures its tax system to reduce risks

faced by investors (for example the risk that high royalties or input taxes will cause losses) it can in the long run secure both more investment and higher tax revenue over the life of a petroleum field; and,

- third, that the pursuit of "tax neutrality" with respect to petroleum activity is not a simple matter of setting the same overall taxes as are applicable to other sectors.

Any system of terms should target realised rents, and this itself should offer the prospect of greater stability, thereby reducing an investor's perceived level of risk. Key elements in any package will include the following:

- measures (such as rapid depreciation or cost recovery) to facilitate early payback of initial outlays;
- a focus on the taxation of profit (rather than inputs or gross output), and on the sharing of profit in way that allows the investor to secure the required rate of return as early as possible, given the intrinsic economics of the project, thus making petroleum rent the main base for taxation;
- the presence of some device providing early revenue to the government, and a payment of some sort whenever production is occurring;
- the proportion of the value of the resource eventually taxed is high enough to outweigh any temptation to future governments to change the terms, while leaving sufficient upside potential for the investor to make the initial risk-taking and resource commitment worthwhile and to provide incentive for efficient operation.

In appraising a petroleum project, large companies will examine first the intrinsic economics of the project under the given tax regime. This usually involves estimation of an expected rate of return (in discounted cash flow terms) in constant prices in an all-equity (un-g geared) case. This return will have to exceed a corporate threshold, adjusted for special project risks and political risk. The average fiscal burden will be vital to this assessment, but so will the timing of the major part of the burden - and thus the fiscal structure - the later a given burden is imposed the higher will be the investor's expected rate of return.

In current conditions in Iraq, with much general legislation needed and a functioning court system at best rudimentary, the incorporation of the above principles in a body of laws (such as is typically the case in OECD countries with the associated dispute resolution procedures) is not likely in the near future. Accordingly the principles noted will have to be incorporated in Production Sharing Contracts or Agreements. (PSC's or PSA's).

To ease administrative burdens associated with the case-by-case negotiation (and subsequent execution) of individual field or licence PSA's, a popular halfway house involves using a model production sharing agreement with a fixed income tax regime in a bidding round for particular petroleum prospects. This is likely to be the most practicable arrangement in Iraq for a significant period.

PSA Structures (see also Annex 4 pp ■ for additional company points)

Assuming that a model PSA is likely to be used, what may be desirable fiscal structures?

In economic terms a gross royalty and minimum state production share (with cost

oil limit) have similar properties. Simplicity and company preferences suggest that the minimum state production share is, on balance, the preferred course.

Setting the correct parameters for cost recovery in a model PSA will be difficult. In Iraq the balance of probabilities appears to indicate that large low-cost fields will be the main candidates for development and that, at least for the time being, major exploration programmes will not be the priority for investment. In that case it could be argued that relatively low cost oil limits of the kind put forward previously in Iraq and by its neighbours are suitable. If there is high production very soon after initial (and staged) investment a limit of 40% or less will not deter investors. It is equally possible to argue that a higher cost oil limit would not disadvantage the state where the ratio of recoverable costs to revenues in any year is low. Agreeing a higher cost oil limit (at least in negotiations for individual projects) would ensure that developments with a different cost profile would not be deterred.

The question of adding an uplift or investment allowance to capital costs will arise. In Iraq this may be especially problematic because of the likelihood in many fields of very early recovery of outlays. An uplift that is highly attractive in those circumstances may not be at all adequate where recovery is delayed. This problem can also be overcome by the use of production sharing based upon cash flow measures.

Because of the potential for very large, low cost and thus highly profitable fields, some variety of progressive production sharing is likely to be necessary. Without it a fixed production share for the state will either be set too high for less attractive fields or too low to encourage public perceptions that the state is receiving a fair share in the profitable cases.

PSA's in the region have traditionally addressed this (like the early Indonesian PSC's) by using a scale of production shares that rises in the state's favour as the daily rate of production increases. This structure is widely used and is often suited to case-by-case negotiations where a great deal is known about a prospect. However, it has numerous disadvantages:

- Although it appears volume-based it does not avoid the need for regulatory scrutiny of costs or for valuation of petroleum (for cost recovery).
- Daily rates of production are only a proxy for the intrinsic profitability of a resource – that also depends on costs, prevailing prices and location.
- For smaller fields, daily output is likely to be high at the beginning and tails off quickly; unless combined with no limit on cost recovery oil the system therefore defers recovery of outlays by investors.
- The system can be made more sensitive, for example, by the introduction of price bands – but only at the expense of much added complexity.

Alternative systems that can impose lower administrative burdens have become popular in North Africa (Tunisia), the former Soviet republics (Azerbaijan and Kazakhstan) and in many newcomers to petroleum exploration and development (countries in sub-Saharan Africa and Latin America).

The two main contenders are (a) production sharing triggered by the contractor's achieved rate of return and (b) production sharing triggered along a progressive scale for the payback ratio or "R Factor". The advantages of these two alternatives are examined in more detail in Annex 4. Option (a) is probably the most useful for

Iraq.

Special issues in fiscal design

Point of taxation

The taxation of petroleum as described here refers to the taxation of crude oil (or natural gas) at the point where a "marketable petroleum commodity" (MPC) is produced. This is normally at that point nearest to the wellhead or landing point where initial treatment of the crude (or gas) results in a saleable product. Oil for tax and production sharing purposes would be valued net of the cost of any transportation services. In other words, fiscal arrangements designed to secure petroleum rent for the state should be confined to upstream activities. A pipeline company is usually taxed at normal corporate rates on the profits of the transportation services provided.

Valuation

The valuation of crude oil for PSA and tax purposes is now the subject of well-tested international experience. Because crude oil is widely traded, and marker prices are easily available the determination of arm's length prices and their application to particular transactions is not, in principle, difficult. It does, however, require skill-intensive monitoring by national authorities – especially to establish true arms length values for tax reference pricing purposes.

Valuation of gas presents many more complexities. Use of a variety of pricing arrangements is possible including reference pricing (if any comparable uncontrolled price can be identified) or netback pricing. Netback pricing requires calculation of the actual or imputed charges for downstream facilities. The nature of this pricing depends heavily on the degree of risk in any transaction assumed by owners of downstream facilities. In Iraq there will be few alternatives initially to negotiation of gas pricing case by case.

Separate treatment of oil and gas for fiscal purposes can be avoided if the ROS PSA system noted above is adopted.

Ring-fencing

Most PSA systems impose a ring-fence by field or contract area for purposes of cost recovery and production sharing. This means that costs of one field (or contract area) may not be recovered from the production of another. In a new petroleum province, with little prior activity, a field-by-field ring fence can be justified on the grounds that, without it, a government may achieve very little early revenue from petroleum. In the PSA's in the region around Iraq a ring fence by contract area has been more common; the same appears to be the case on a wider international scale.

From an economic viewpoint, the absence of a ring-fence discriminates against new entrants where established firms have significant volumes of production. In this case the established firms would create a large competitive advantage over new comers by recovering new exploration and development costs against current production.

One possible exception to the ring-fence concerns the cost of failed exploration outside the contract area. If it proves to be a priority in Iraq to encourage high-risk exploration of new areas then the costs of failed exploration could be recoverable once the acreage to which it applies has been relinquished.

If the PSA terms are combined with regular corporate income tax the same arguments apply for ring fencing of those tax accounts.

Tax creditability

In order to avoid transfer of revenues to foreign treasuries it will be important for Iraq to maximize the portion of its fiscal impositions that can earn foreign tax credits (FTC) against any tax liability the investor faces in other jurisdictions.

In assessing the creditability of any tax against income tax liabilities in the investor's home jurisdiction it will ultimately be necessary to seek the advice of a specialist tax practitioner in the jurisdiction concerned. In Annex 4 more comment is provided, but, of necessity, only from general principles and experience.

Contractors and sub-contractors

Holders of PSA's (or other petroleum rights) employ subcontractors to carry out important segments of operations for them. These subcontractors, however, are paid directly and are not usually entitled to a share of petroleum produced. They are not, therefore, participants in a PSA and not covered by its fiscal privileges, unless by some explicit arrangement.

In the case of "foreign" subcontractors (for which a legally workable definition must be included) many jurisdictions impose a simple final withholding tax on the gross value of payments to them made by a PSA contractor. The rate of withholding tax can range from 4 to 8 per cent; it is usually a strict substitute for corporate income tax on the profits of the subcontractor from the PSA business. Provisions on other taxes, including import duties, would be the same as for the main PSA contractor, provided that the activities carried out, or goods imported, are for the purposes of the PSA.

Problems arise where the domestic support industry is also well established and where "foreign" subcontractors have other business interests in Iraq. In the first case, the PSA tax privileges and the final withholding tax might discriminate against Iraqi-owned and controlled subcontractors, or foreign firms that choose to set up "permanent establishments" in Iraq. Where subcontractors have two types of business (PSA and non-PSA), the final withholding tax on PSA activities creates an incentive to attribute costs to non-PSA activities; indirect tax privileges might be claimed for supplies that have nothing to do with PSA work. These problems emerged as significant, for example, in the first decade of foreign investor petroleum activity in Azerbaijan and Kazakhstan.

The right balance of privileges in Iraq is very much a local matter; international experience can draw attention to the issues, but not necessarily offer the right solution.

4) A Context for Reform

The preceding sections demonstrate that Iraq has the potential to return to being a growing, prosperous economy, based largely, but not entirely, on the successful development of its oil and gas resources. In the economic modelling undertaken in this study the value of Iraq's oil has been linked to world prices. These prices are determined to a large extent by actions taken by OPEC, the organisation of which Iraq has been a member.

As an Islamic, Arab state it seems unlikely that Iraq will cease to be a member of OPEC and that eventually OPEC decisions will affect its oil production levels. Though production capacity may, as indicated by CGES, reach 6.0mn b/d or more, and a growing proportion of this capacity will be under PSA terms, companies will need to factor into their economic calculations (as is done in other OPEC member states) the impact of depletion controls and the offsetting effect of possible resultant price increases.

Though this study has concentrated on fiscal concerns affecting the potential for oil and gas development in Iraq, fiscal issues are perhaps one of several major elements relevant to the reform or liberalisation of the upstream oil and gas industry. In a study by the World Energy Council, six components are identified as follows:-

- Control
- Operating Framework
- Privatisation
- Pricing and Sales
- Trade Restrictions
- Fiscal Framework

Each of these six components is further subdivided, as shown below in Diagram 1.

Diagram 1 – Petroleum Frameworks

Control	Operating Framework	Privatisation
A State ownership (State agency or joint stock company) B Private ownership (foreign ownership restricted) C Private ownership (foreign ownership not restricted) D Combination - predominance of state ownership (where there is both state and private ownership, the influence of the state-owned entities is greater than that of those which are privately owned) E Combination - predominance of private ownership (as for D, but with the privately owned entities being more influential)	A Joint venture B Production sharing contract C Concession D Service Agreement E Mixed	A No privatisation taken place B Privatisation process underway C Privatisation substantially complete D Always in the private sector
Pricing and Sales	Trade Restrictions	Fiscal Framework

A Sales to Government at market price B Sales to Government at fixed price C No restrictions on sales	A Import restrictions B Export restrictions C Import and export restrictions D No restrictions	A Specific petroleum taxes or higher income tax rates imposed on petroleum activities B Negotiable petroleum taxes or income tax rates C No specific petroleum tax regime in place
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Different regions in the world are then examined by the WEC to establish their characteristics. We have extracted data for some countries in the Africa and the Middle East, including Iraq.

Until now the Iraqi oil industry has been state-owned (A). The previous government had already been signed a limited number of PSC's, and had stated that it planned to offer up to 25 new fields to foreign companies, many of them under a PSC. In addition to the new field development projects, Iraq also intended to offer service contracts for provision of technology for eight producing fields (E). A series of economic reforms was introduced in 1987 and efforts were made to privatise some state assets. This attempt to liberalise the economy came to an abrupt end with the invasion of Kuwait (A). Given the imposition of UN sanctions, pricing and sales were controlled by the UN – hence the n/a classification, here and for Trade Restrictions. Finally, there was no specific fiscal regime for the industry as all profits were state property (C).

Diagram 2 – Regional Petroleum Frameworks

Country	Control	Operating Framework	Privatisation	Pricing and Sales	Trade Restrictions	Fiscal Framework
Angola	A	E	A	C	D	A
Egypt	D	E	A	A	C	A
Iran	A	E	A	B	D	C
Saudi Arabia	A	E	A	B/C	D	C
Iraq	A	E	A	n/a	n/a	C
Iraq (new?)	D	E	B	C	D	A

In looking to the future, though there is pressure to privatise the whole industry, the judgement taken here is that the most likely medium term outcome will be a possibly mixed outcome, whereby there is one or more state companies working in combination with foreign entities. This results in mixed control (D) and operating frameworks (E). The downstream could be privatised (B), with these companies perhaps able to participate in the upstream. For pricing, sales and trade there should be no restrictions (C). Finally a specific fiscal framework needs to be developed (A), most probably using ROR PSA terms.

In this context of changes to control, ownership, financial and fiscal systems, Iraq's economy should be free of the economic and political fetters imposed under Saddam. The unanswered question today is how rapidly parts of the population

will come to recognise the benefits that await the country when sabotage and murder cease.