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# Exploration and development of Iran's oilfields through buyback

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**Abstract**

*The use of buyback for the development of oil and gas fields is an established mechanism in Iran. Current legislation authorizes the National Iranian Oil Company (NIOC) to use buyback for both exploration and development. The buyback scheme can be defined as a risk service contract, under which the contractor is paid back by being allocated a portion of oil/gas produced as a result of providing services. Buyback is based upon a defined scope of work, a capital cost ceiling, a fixed remuneration fee and a defined cost recovery period. When buyback is used for both exploration and development, the specifications of the field to be developed are unknown at the time of contracting and therefore agreement on the scope of work, duration of development operations, ceiling for capital costs, fixed remuneration fee, and duration of cost recovery need to be deferred to the time when a commercial field is discovered. This article first outlines the introduction of buyback for development of Iran's oil and gas fields. It then examines the main features of the mechanism. Third, the use of buyback for both exploration and development is explored and related challenges discussed. Finally, the article reviews the new buyback model proposed by NIOC to address these challenges.*

*Keywords*: Buyback; Exploration; Development; Oil contracts; NIOC; International oil company.

**Disclaimer**: The views expressed are those of the authors alone and do no necessarily reflect the views of PEDEC or NIOC or any other body of the Iranian Government.

## 1. Introduction

For more than a decade, buyback has been the main mechanism for the development of oil and gas fields in Iran. A number of buyback contracts have been entered into between the National Iranian Oil Company (NIOC) and international oil companies (IOCs). These buyback contracts were concluded mainly to develop those oil and gas fields that had been explored previously. As buyback had been relatively successful in attracting foreign investment in the oil sector (Petrossian, 2004b), Iranian legislature recently authorized NIOC to use the buyback mechanism for both exploration and development of oilfields in certain areas of the country. Following these legislative changes, NIOC announced a call for tender for exploration and development of 16 blocks, and the buyback development model was modified to meet the requirements of both exploration and development. This article will first outline the introduction of buyback for the development of oil and gas fields in Iran; it will then examine the main features of this mechanism. It will then turn to the use of buyback for both exploration and development, and discuss related challenges. The article then explores the buyback model proposed by NIOC to address these challenges. Finally, it reviews the expectations and concerns of IOCs to discover to what extent these have been addressed in NIOC's new buyback model.

## 2. Introduction of buyback in Iran's oil industry

Buyback schemes in Iran's oil industry can be traced back to the Petroleum Law, enacted in 1974, a few years before the Islamic revolution of 1979 (OPEC, 1976). This law imposed significant limitations on the participation of international oil companies in upstream oil and gas operations. Article (3) of the Petroleum Law provides that all oil and gas resources, as well as the oil industry itself should be nationalized; and that any activities related to exploration, development, production and distribution of oil and gas were to be carried out solely by NIOC, either directly or through its appointed contractors and agents. According to these provisions of the law, the engagement of IOCs in exploration, development and production was restricted to cases where the foreign companies acted on behalf of NIOC

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as its contractors. The conclusion of any agreement, such as concessions, production-sharing or joint-venture contracts, under which IOCs were not engaged as contractors under NIOC, was prohibited. Instead, a kind of risk-service contract was developed, within the mandate of the legislation, and a number of such contracts were concluded.[1]

These service contracts were not turnkey contracts with a defined scope of work and a fixed price, such as engineering, procurement and construction (EPC) contracts,[2] but were flexible in respect of scope of work, capital investment and reward. The costs of exploration and development, and associated risks, were to be borne by the IOC, acting as NIOC's contractor. In return, if a commercial field was found and subsequently developed, a portion of the oil produced from the field was to be sold to the IOC at prevailing market prices for recovery of costs (capital with interest). In addition, the IOC was entitled to purchase a percentage (i.e., 5%) of oil produced from the field at a discount (i.e., 5% less than the market price) as reward for risks taken.[3] If no commercial field was found, the contract would be terminated and expenses borne solely by the IOC.

After the establishment of the Islamic Republic of Iran in 1979, considerable restrictions were imposed by the Constitution on participation in economic activities by the private sector in general, and particularly by foreign investors. Many economic sectors were nationalized.[4] Foreign persons were denied the right to establish a company in Iran (article 81), and granting any concession to foreign persons was banned (article 81). Employment of foreign experts was restricted (article 82), and control by foreign persons over natural resources was prohibited (article 153).

In 1987, a new Petroleum Act was approved by the Parliament at a time when the country was seriously involved in a prolonged war with Iraq (1980–1988) and there was a mood of pessimism in the country about the engagement of foreign investors in economic activities.[5] The new Act imposed a total ban on any form of foreign investment in the oil and gas industry. It provides that all petroleum activities must be carried out under the control and supervision of the Ministry of Petroleum. Article (2) of the Act provides that petroleum resources are part of the public domain, which belongs to the Iranian people, and remains at the disposal and control of the Government. According to article (6) of the Act, all capital investment needed for oil and gas projects shall be proposed by the Ministry of Petroleum to be included in the annual budget. Article (5) of the Act, however, permits the Ministry of Petroleum and affiliated companies (e.g., NIOC) to enter into contracts with local and foreign individuals or companies for carrying out oil and gas projects.

In the early 1980s, the policy of the Iranian Government was to use the services of IOCs under turnkey or EPC contracts. Under these contracts, the scope of work is precisely defined and prices are fixed for materials and services to be provided by the contractor. Although such contracts were held to be compatible with the provisions of the Constitution, certain difficulties arose in practice. First, a budget for oil projects needed to be allocated from public funds, although sufficient hard currency was not then available to meet the increasing demands of the industry. Second, it was difficult to define precisely and beforehand the scope of work of upstream oil projects, and therefore a great number of change orders became necessary over the life of the contract to deal with unforeseen situations as they arose. These change orders sometimes had an adverse impact on the initial budget of the project and the duration of the contract.

In 1987, as a first response to the problem of hard currency shortage, the Iranian Parliament authorized NIOC to obtain short- and medium-term loans (usance) to finance five oil and gas projects. 100,000 barrels/day were allocated for a period of three years to service the loans. In the following year, the Parliament authorized NIOC to enter into agreements up to US$3.2 billion with competent foreign companies for the development of the gas fields at Pars and South Pars, on condition that all costs would be recovered by output from these fields. The law also permitted the Central Bank of Iran to guarantee the repayment of costs. With this law, a kind of buyback was developed in Iran. Under this scheme, IOCs were required to provide funding for and carry out oil projects as NIOC's contractors. When a project came on stream, IOCs would be paid from the output of the project. The risk of any shortfall in the production was taken by NIOC, as the Iranian Central Bank guaranteed repayment of costs. As no risks were taken by IOCs, this kind of buyback was quite different from the typical buyback, subsequently introduced by NIOC, where the risks of any shortfall in production are placed on the IOC.

A further step was taken with the Budget Act[6] of 1993, which authorizes NIOC to enter into oil contracts with IOCs up to a value of US$2.6 billion on the following conditions:

[1] In many oil producing countries, old concession agreements have been replaced by production-sharing agreements. In Nigeria, for example, production-sharing agreements are preferred to service contracts (Atsegbua, 2000; Mahumud and Russell, 2002).

[2] Under a typical service contract in the oil industry, a national oil company hires the services of an IOC as a contractor without the IOC being a concession holder or partner. The IOC is usually remunerated in cash rather than in crude oil (Blinn *et al.*, 1986).

[3] See, for example, the service contract signed between NIOC and Ultramar Co. Ltd (reprinted in OPEC, 1976:57–76).

[4] As provided by article 44 of the Constitution of the Islamic Republic of Iran.

[5] For an unofficial translation of the Act see: www.alaviandassociates.com/documents/petroleum.pdf.

[6] The Iranian budget year starts on March 21st and ends on March 20th of the following year. When this article refers to a year in this respect, this means 12 months commencing on March 21st of that year and ending on March 20th of the subsequent year.

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- Instalments shall be paid exclusively from exports of resultant outputs of the project, and therefore no guarantee shall be provided in terms of any shortfall in production;
- Utilization of Iran's existing potential in designing, engineering, construction and installation shall be maximized;
- Transfer of technology shall be accomplished through joint-venture agreements between local and foreign companies; and
- A minimum of 30% of Iranian content shall be achieved (*Iranian Official Gazette*, 1993).

Although the concept of buyback was effectively created by this Budget Act, the terminology of "buyback" as such was first mentioned in the Budget Act of 1994, by which NIOC was authorized to enter into buyback agreements up to US$3.5 billion for the setting up of the Asalooye gas refinery and the development of the gas fields at North and South Pars. The 1994 Budget Act provides that costs and profits shall be reimbursed to the IOC in equal instalments out of the proceeds generated from the sale of the resultant outputs of the project at market prices for a period of 5 years for the Asalooye gas refinery, and 10 years for the development of the fields at North and South Pars. No guarantee should be provided by any Iranian banks or State enterprises for the recovery of costs and profits in the event of any shortfall in production or any decrease in oil and gas prices (*Iranian Official Gazette*, 1994).

By virtue of these legislations, IOCs have been permitted to invest in certain oil and gas projects under buyback schemes. Therefore, article (6) of the Petroleum Act of 1987, which prohibits any foreign investment in oil and gas projects, has been amended by implication. The authorization to conclude buyback was restated in the Second, Third and Fourth five-year economic, social and cultural development plans, of 1995–1999, 2000–2004 and 2005–2009 respectively.[7] A major development in buyback occurred with the Budget Act of 2003, which authorizes NIOC to conclude buyback for both exploration and development of oil and gas fields. This development will be further explored below.

## 3. Main features of buyback for development of oilfields

Iran's buyback mechanism for development of oilfields works through contracts, under which IOCs undertake to provide funding, and carry out development operations in respect of a gas/oil field. In return, NIOC agrees to reimburse the IOC, either through direct sale of the resulting oil/gas to the IOC, or by payment of proceeds generated by selling the IOC's portion of oil/gas to third parties. To clarify Iran's buyback for development operations, the article first analyses the main objectives of the mechanism; then the definition of development operations. The article then discusses the fiscal regime for buyback, and finally the risks taken by IOCs in conjunction with buyback.

### *3.1. Main objectives of buyback*

Buyback contracts, as drafted and used in Iran, aim at securing State sovereignty over oil and gas resources and maintaining government control over oil and gas operations, as required by the Constitution, the Petroleum Law of 1974 and the Petroleum Act of 1987. Certain provisions for buyback were drafted specifically to achieve those purposes. One provision, for example, mentions that NIOC authorizes the IOC to carry out development operations on behalf of and in the name of NIOC. This means that the IOC acts as NIOC's contractor, and not as a partner or owner of the project. Another provision mentions that all lands acquired and assets purchased for the project shall be the sole property of NIOC. Thus, any materials, articles, equipment and machinery that need to be imported for the project shall be procured by the IOC in the name of NIOC.

The other main objective in using buyback in Iran is to get access to the foreign currency and expertise required for the costly, risky and sophisticated undertaking of developing oil and gas projects. Thus, in buyback contracts, the responsibility of financing and carrying out development operations rests solely with the IOC. In some cases, however, the buyback contract has been awarded to a joint venture comprised of IOCs and local companies.[8] In these cases, each partner is jointly and severally responsible to NIOC for financing and carrying out the project.

### *3.2. Definition of development operations*

Before a field is exposed to buyback for development, exploratory activities are carried out by NIOC or its contractors to ascertain that development of the field is economically viable, that is, that a commercial field has been discovered. Once commercial viability has been determined, or a commercial field discovered, IOCs will be invited to tender for development. The data and information obtained as a result of exploration operations will be given to IOCs to prepare and propose a comprehensive plan for development of the field. This plan, which defines in detail the scope of work and activities to be carried out, is commonly referred to as master development plan (MDP).

The MDP is an essential part of a buyback contract, which is a mandate for development operations. The IOC

[7] The economic, social and cultural development plans were approved by the Parliament, *inter alia* to advance the market orientation of the economy and to improve the living standards of the population.

[8] In the Azadegan project, for example, the buy-back contract was awarded to a joint venture, comprised of INPEX of Japan with a share of 75%, and Naftiran Intertrade Company (NICO), a NIOC affiliate, with a share of 25%.

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is required to achieve the objectives of the contract by implementing the MDP. Any deviation from the MDP requires prior written approval by NIOC, and NIOC has the right either to accept or reject such requests. Different phases of development operations, as well as milestones within each phase, are defined in the MDP. Capital expenditures are calculated, and eventually agreed in the contract, based on price breakdowns provided in the MDP. Thus, buyback for development requires that the parties agree on the details of development at the time of contracting.

### 3.3. *Buyback fiscal regime*

All funds needed for carrying out an MDP are to be secured by the IOCs. Four categories of costs are envisaged in buyback contracts:

- Capital costs (capex);
- Non-capital costs (non-capex);
- Operating costs (opex); and
- Bank charges.

Capex refer to all costs that relate directly to carrying out development operations, as classified in an accounting procedure annexed to the contract. Non-capex refer to those costs that are difficult to ascertain at the time of contracting, being mainly moneys paid to Iranian authorities in respect of development operations: taxes, social security charges, customs duties, and any other levies required in Iran. Opex refer to expenses directly, necessarily and exclusively incurred and paid for production before the project is completed and handed over to NIOC. As production operations are to be conducted by NIOC when the project is completed, opex are mainly relevant when the production target is planned to be achieved in two or three phases, and the IOC authorized to operate the field developed in the first or second phase. Bank charges refer to costs of financing, which are calculated according to the London Interbank Offered Rate (LIBOR), plus a defined percentage (e.g., 0.75%).

These categories of cost are recoverable under certain conditions. First, the objectives of the contract, as stated in the MDP, must be achieved by the IOC. Second, the authenticity of costs must be verified by NIOC, or by an international auditor acceptable to NIOC. Third, costs must be correctly categorized as capex, non-capex, opex and bank charges in accordance with the accounting procedure annexed to the contract.

Those costs categorized as capex will be reimbursed up to a ceiling fixed in the buyback contract. Thus, any costs beyond this limit incurred by the IOC to implement the MDP and complete the project cannot be recovered, and shall be borne by the IOC. No cap is placed on non-capex costs. Thus, any non-capex incurred by the IOC will be recoverable. There is also no ceiling for opex and, principally, any costs duly categorized as opex will be recovered. Bank charges apply to capex and non-capex expenditures, calculated from the first month following the month in which costs were incurred, and paid until they are recovered. Bank charges do not apply to opex, as they are supposed to be recovered in the following quarter. If, for any reason, opex are not recovered in the following quarter, bank charges apply equally to them. If the completion of the project has been delayed for reasons not attributed to the acts of omission of NIOC, no bank charges will apply to the costs during the delay period.

In addition to costs, a fixed amount in the buyback contract will be agreed to be paid to the IOC as a reward for its investment and risks taken. This reward, commonly referred to in buyback contracts as the remuneration fee, will be paid if the objectives of the contract, as defined in the MDP, are duly achieved by the IOC and the project successfully handed over to NIOC.

Capex, non-capex, bank charges and the remuneration fee will be amortized in equal monthly instalments over a certain number of cost-recovery years, as specified in the buyback contract. Opex, however, are recovered in the quarter following that in which they were incurred. Recovery of opex has priority over that of other costs.

The costs and the remuneration fee are to be recovered through an allocation of a portion of outputs of the project. This is usually around 50% to 60% of total production. As IOCs have no title to the oil in place, or to oil at the wellhead or export point, NIOC may sell that portion to the IOC (or to a lifter appointed by the IOC) at market prices and credit its proceeds to the project account as recovery of the costs and the remuneration fee. Alternatively, NIOC may sell that portion to a third party and arrange with the third party to pay the proceeds directly to the IOC for recovery.

Three elements limit the amount of money allocated to the IOC for cost recovery and the remuneration fee:

- The maximum portion of oil that can be allocated to the IOC under the buyback contract (e.g., 50% of total production);
- Monthly equal instalments calculated as a result of dividing the costs and the remuneration fee by number of months specified in the contract as the cost recovery period; and
- The rate of return of the IOC, which shall not exceed a fixed percentage (e.g., 16%) mentioned in the contract.

### 3.4. *Risks taken by IOCs*

IOCs take a number of risks when engaging in buyback contracts.[9] The following risks are worth mentioning here.

[9] For an assessment of the risks borne by IOCs in buyback contracts for development, see generally Groenendaal and Mazraati (2005).

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First, the IOC is required under the contract to secure sufficient funds for development operations. Capex are determined at the time of contracting, but any extra capex needed to implement the MDP should also be provided by the IOC. The amount of money for non-capex or opex is not fixed at the time of contracting, and should be provided by the IOC as necessary. The actual funds needed for non-capex and opex may go beyond the amounts estimated at the time of contracting.

Second, all capex needed for the implementation of the MDP and for achieving its objectives must be spent by the IOC, but will be recoverable only within the capex ceiling agreed in the contract. Unpredictable changes in market conditions may increase capex beyond its cap, with the excess to be borne solely by the IOC. Similarly, many technical issues may subsequently arise that cause capex to exceed its ceiling, but since they are required for the achievement of the objectives of the contract, they must be borne by the IOC.

Third, as the MDP was prepared based upon the data and information then available, the MDP may be required to be modified as more information is obtained as a result of development operations. In such situations, the IOC needs to obtain NIOC's approval and to bear the resulting costs if they exceed the capex ceiling.

Fourth, as recovery of costs and remuneration fee is conditional upon the achievement of contract objectives — i.e., reaching a specific level of production — the IOC will sustain a big loss if it fails to achieve those objectives. Also, if there is insufficient inflow from the field, or if oil prices are low, the IOC many not be able to recover all the costs and the remuneration fee, even upon achievement of the contract objectives. In such cases, the outstanding amounts will be carried over to the next quarter. If low prices persist, and if the cost recovery period elapses, such outstanding amounts may not be recovered at all.

Fifth, the project may be delayed. Many reasons not attributable to the IOC may contribute to this. Delaying factors may include: changes in the MDP; poor quality and performance by local sub-contractors; delays in obtaining governmental clearances; delays in obtaining approval from NIOC; delays by NIOC in handing over the contract area to the IOC, and other obstructions. A delay in start-up may have adverse impacts on project costs, but the recovery of capex nevertheless remains limited to its cap. Any delay in achieving specified production levels will postpone cost recovery and payment of the remuneration fee.

## 4. Buyback for exploration and development of oilfields

In 2003, as explained above, Iranian legislation authorizes NIOC to use buyback for exploration and development of oil and gas fields. Section 21(f) of the Budget Act 2003 authorizes NIOC to carry out exploration activities at the risk of contractors everywhere in the country, except in the Caspian Sea, the Persian Gulf, and in four oil-rich provinces in southern Iran, being Khuzestan, Bushehr, Kohkilouyeh, and Ilam. This legislation sets out the following requirements for this kind of buyback:

- Exploration activities shall be carried out by the contractor at the contractor's own cost;
- If no commercial field is discovered, the contract will be automatically terminated, and any costs incurred by the contractor relating to the exploration activities shall be borne solely by the contractor;
- If a commercial field is discovered, development of the field will be awarded to the contractor based on a buyback mechanism;
- Direct and indirect costs and expenses relating to exploration will be included in the development contract, and will be reimbursed through the allocation of a portion of the resultant output of the project; and
- Other statutory requirements mentioned for buyback contracts shall also be respected (*Iranian Official Gazette*, 2003).

This statutory authorization was extended in the budget acts of 2004, 2005 and 2006.[10] As a result, 51 oil blocks in different parts of the areas allowed by the legislation were identified as prospective destinations for exploration and development purposes. Out of these 51 blocks, 16 blocks, covering an area of 253,000 $km^2$, were put up for tender by IOCs at a conference held by NIOC at The Hague on 28 and 29 January 2004.[11]

As the buyback scheme was originally launched for the development of oil and gas fields already discovered, the decision to use the model for both exploration and development raised the question as to its appropriateness for this purpose (Petrossian, 2004a). Indeed, the model needs to be modified to make it compatible with the requirements of exploration and development (MEES, 2004). The article first explores the differences between a buyback contract for development and one for both exploration and development. It then details the improved buyback model proposed by NIOC. Finally, the article reviews the expectations and concerns of IOCs in relation to buyback, and discusses to what extent these are addressed in the improved model.

### 4.1. Differences between the old and new schemes

There are a number of differences between a buyback scheme used only for the development of a field already discovered, and one to be used for both exploration and development. First, in the former case, a commercial field has already been discovered before the buyback contract is

[10] By virtue of Notes 21(y), 2(j) and 2(4), respectively (*Iranian Official Gazette*, 2004, 2005 and 2006).

[11] For a map and block sizes see MEES (2003).

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concluded. Thus, an MDP can be agreed upon at the time of contracting. In the latter case, however, exploration must first be implemented. If the exploration phase is successful and a commercial field discovered, an MDP will then be agreed upon. Thus, at the time of contracting, the parties are not yet able to agree on an MDP, which defines the scope of work for developing the field, as the field has not yet been discovered.

Second, buyback for development is a kind of cost-plus arrangement, under which the actual cost of the project, within a cap, as well as a fixed remuneration fee will be recovered by the IOC within a specified period of time. Thus, at the time of contracting, two figures must be agreed upon:

- A capex ceiling, which limits the amount of capital expenditures incurred by the IOC that may be recovered; and,
- A fixed remuneration fee.

In buyback for both exploration and development, a capex ceiling for exploration can be agreed upon at the time of contracting, but the capex ceiling for the development phase and the remuneration fee need to be agreed upon subsequently, once a commercial field is discovered.

Third, in buyback for development, the maximum percentage of oil and gas to be allocated to the IOC for purposes of cost-recovery and the remuneration fee, is determined at the time of contracting. The cost-recovery period, within which the IOC may recover the costs and its remuneration fee, is also agreed upon at the time of contracting. In contrast, when buyback is used for both exploration and development, these important issues — which have a significant impact on the project's commercial viability — must be agreed upon at a later stage, when a commercial field is discovered.

Fourth, in buyback for both exploration and development, risks are much higher compared to buyback for development only. In addition to the risks inherent in buyback for development, the IOC must also assume the risk of non-discovery of a commercial field. In addition, at the time of contracting, the IOC is not able to assess the capital investment required to develop a prospective field.

It thus becomes clear that, if buyback is to be used for both exploration and development, certain major issues cannot be determined at the time of contracting, although these very issues are essential for the development aspect of the contract. Thus, if the model is to be rendered suitable for both exploration and development, it needs major modifications. Modifications to be made must maintain a balance between the expectations and concerns of both NIOC and IOCs. An IOC requires the assurance that it will be awarded exclusive rights to the development of any commercial field that it discovers. NIOC, for its part, is concerned that the proposal of the IOC for the development of a commercial field, should one be discovered, will be reasonable and acceptable, as well the proposals regarding the MDP, capex ceiling, remuneration fee, duration of cost recovery, and other main issues. A mechanism needs to be formulated to address these concerns.

### 4.2. NIOC's improved buyback model

A new and improved version of buyback for exploration and development has been proposed by NIOC. The article now reviews this new model to determine whether it has adequately addressed reasonable expectations and concerns of both NIOC and IOCs. Three phases of activities are envisaged in the new model: exploration, appraisal and development.

#### 4.2.1. Exploration phase

The part of the model covering the exploration phase is straightforward. The IOC is required to carry out exploration activities for oil and gas by topographical, geological, agrochemical or other methods, including seismic acquisition, drilling, reservoir evaluation for oil and gas and all other functions and activities normally associated with exploration. A master exploration plan should be agreed on at the time of contracting, detailing the activities to be carried out by the IOC. The following major issues are also to be agreed upon at the time of contracting: minimum expenditure by the IOC for exploration operations; minimum yearly expenditure; the area to be provided to the IOC for exploration work; relinquishment obligations; duration of exploration activities (e.g., four years) and possible extensions; definition of a commercially viable well and settlement of any likely disputes in this respect; and risks to be assumed by the IOC if no commercial well is discovered.

#### 4.2.2. Appraisal phase

By contrast, the portion of the model dealing with the appraisal phase is not so straightforward, as many details of this phase are unknown at the time of contracting. The parties can, however, agree that if a commercial well is discovered as the result of exploration and such a discovery is confirmed by NIOC, the appraisal phase shall commence. The model also provides that the IOC shall, within a defined period of time, submit a master appraisal plan (MAP) to be approved by NIOC. The proposed MAP must specify what further activities are to be carried out by the IOC to commercialize the field, delineate the reserves, reduce investment risk and implement an efficient development programme. The following major issues could also be agreed upon at the time of contracting: a minimum expenditure by the IOC for appraisal activities; minimum yearly expenditure; relinquishment obligations; duration of appraisal activities (e.g., two years) and their extension; definition of a commercial field and settlement of any likely dispute in this respect; and, risks to be assumed by the IOC if no commercial field is discovered.

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*4.2.3. Development phase*

The part of the model relating to the development phase is quite complicated, as key aspects of development cannot be determined at the time of contracting. NIOC's model provides the following principles for awarding the rights to the development phase.

*4.2.3.1. Appraisal phase*

If the exploration phase is successful, and a potential oil well discovered, this leads directly to the appraisal phase. Similarly, if the field is determined to be commercially viable, the project will move to the development phase. Thus, the definition of commercial viability (commerciality) of a well or field is very important. In the model, this condition is carefully defined.

*4.2.3.2. Master development plan*

The new buyback model requires the IOC to prepare a master development plan (MDP) for NIOC's review and approval for a newly discovered commercial field. The proposed MDP must include a work programme and budget for the entire development phase, its estimated duration and a time schedule for the completion of all required activities. If the parties have differing opinions about the details of the MDP, and no settlement can be reached within a fixed period of time, the unsettled issues will be referred to an internationally recognized authority with expertise in the development of oil and gas fields. A list of three experts will be proposed by NIOC, from which one candidate will be selected by the IOC. The decision of the selected expert will be binding upon the parties.

*4.2.3.3. Fixed remuneration fee*

In buyback, a fixed remuneration fee is to be rewarded to the IOC in return for its investment and risks taken. As it may not be possible to determine the remuneration fee at the time of contracting, the model provides that the fee will be determined subsequently, and be proportionate to the capital costs so as to secure a fixed rate of return (e.g., 15%) for the IOC.

*4.2.3.4. Production monitoring committee*

As the legislation does not allow NIOC to assign production work to IOCs, upon completion of the objectives of the contract (including a production target), the field will be handed over to NIOC for the production phase. A production monitoring committee, consisting of an equal number of representatives from either party, will ensure that production activities are carried out properly. If further works are needed to enhance or increase the output, the committee will propose suitable action for this purpose, which will be agreed to in a separate contract.

*4.2.3.5. Cost recovery*

When the objectives of the contract are achieved, the cost of exploration, appraisal and development will be recovered, within the ceilings agreed to, from the proceeds of sales of oil and gas allocated to the IOC. If the IOC fails to achieve the production target specified in the MDP, or if insufficient oil and gas is extracted, the IOC may not be able to recover the total costs incurred for exploration, appraisal and development.

### *4.3. IOCs expectations and concerns*

Two blocks out of 16 have been awarded under the improved model of buyback. The Kouh-Dasht block in Lurestan Province was awarded to the China National Petroleum Corporation (CNPC), and the Saveh block was awarded to Thailand's PTT Exploration and Production Company (MEES, 2005). The lukewarm response by IOCs to the new buyback model indicates that their expectations and concerns may not have been addressed appropriately in overhauling. The main expectations and concerns of IOCs can be summarized as follows.

*4.3.1. Settlement*

The current buyback procedure calls for settlement by an outside expert in cases where differences arise over details of the MDP once a commercial field has been discovered. However, it is risky and uncertain to leave essential issues of the contract — such as the capex ceiling, the duration of the development phase and the cost-recovery period — to be decided by a third party. Therefore, this solution is not satisfactory for IOCs.

*4.3.2. Prices*

Under the current model, any increases in prices arising from changes in market conditions are to be borne by the IOC. However, these costs are incurred for the benefit of the project, and should therefore be recoverable by the IOC.

*4.3.3. Benefit from higher oil prices*

NIOC is the only party that benefits from any increase in oil and gas prices. This follows from the fact that the maximum amount of money allocated to the IOC for cost recovery during any one month is limited to a fixed sum. Thus, extra proceeds generated as a result of higher prices will only go to NIOC. However, if prices go down, the IOC will be adversely affected, as the maximum percentage of oil allocated for cost recovery is normally limited to 50% or 60% of the quantity produced. IOCs expect to benefit from high prices by being allowed to recover more oil/gas when prices go up.

*4.3.4. Additional costs*

During the development phase, several unforeseen issues may emerge, in connection with wells, surface facilities and other issues, which require modifications to the MDP. Such changes may give rise to additional costs, and any additional costs exceeding the capex ceiling are not recoverable, and must be borne by the IOC. However, extra

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costs that result from ‘additional works’, even exceeding the capex ceiling, may be recovered if such changes lead to an increase in the objectives of the contract. IOCs argue that costs resulting from changes to the MDP should be recoverable, even if they do not increase contract objectives.

#### 4.3.5. *Ownership of production*

Under the current buyback model, IOCs do not assume ownership of production either at the wellhead or at an export point. IOCs argue that they should be able to own the oil and gas allocated to them at the export point, as this would enable them to reserve booking in accordance with international stock exchange rules.

#### 4.3.6. *IOC participation in production*

Though costs and remuneration fee are to be recovered from revenues of production over a period of time (normally several years), the field, once developed, is to be handed over to NIOC for the extraction phase. Thus, any shortfall in production will adversely affect the IOC, but the field no longer benefits from the IOC’s expertise and capital during this phase. IOCs do not consider the establishment of a production monitoring committee, as proposed in the current model, to be an efficient and effective means to deal with production issues and problems. IOCs prefer to directly participate in production operations through a joint operating body.

#### 4.3.7. *IOCs expect greater benefit*

Under the current buyback model, if everything goes well and as planned and the project is completed within the capex ceiling, the maximum reward given to IOCs is a fixed fee, the remuneration fee. IOCs are reluctant to undertake the huge risks of exploration and development for only a fixed fee; they expect a greater benefit if a rich field is discovered and developed by their contribution and investment.

## 5. Conclusions

There are signs of a growing recognition that NIOC needs to do more to attract IOCs, as it is necessary to maintain current production levels, and to increase current production by one million barrels/day over the five-year period 2005–2009, as required under Iran’s Fourth Five-Year Economic, Social and Cultural Development Plan. NIOC is aware that it will face increased competition from other producing countries and has gone a long way to meet the expectations of oil companies and address their concerns. Some of these expectations and concerns cannot be addressed by NIOC alone, but would require legislative changes. For instance, IOCs are not authorized under current law to conduct production operations or be party to a joint operating body with NIOC. NIOC suggests the following improvements to the current buyback model for both exploration and development: the capex ceiling will be calculated and determined when subcontracts are awarded via tendering; an escalation clause could be agreed on to deal with inflation and changes in market prices of materials, equipment and manpower; in place of fixing a fee for rewarding IOCs, a percentage of the production is given to IOCs according to a sliding scale, if the production reaches a level agreed in the contract; instead of allocating a percentage of revenue of the field to IOCs, a percentage of oil produced is allocated to IOCs to enable reserve booking.

In sum, it is very unlikely that production sharing agreements will be introduced in Iran for exploration and development of oil and gas fields (*Energy Compass*, 2004). NIOC seems prepared to stick to the buyback formula for exploration and development, and no other alternative is envisaged. NIOC’s recent initiative to improve the buyback model in a dialogue with IOCs has been welcomed by the companies (*Petroleum Economist*, 2006). It is expected that a new buyback model, now under review and discussion, will reasonably address the expectations and concerns of the IOCs.

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